DF3 Series Digital Force Gauges

The Chatillon® DF3 Series is a family of digital force gauges ideal for handheld and test stand applications. These battery powered gauges are used to measure axial tensile and compressive forces. The DF3 series is available in several capacities, making them suitable for various basic and complex applications.

NOTE: The functions and features described in this user's guide may not be available on all DF3 models.

POWERING GAUGE ON/OFF The DF3 Series gauge has a dedicated power key. Depress the key for 2 seconds to turn the gauge ON or OFF.

When the gauge is powered on, the Splash screen is displayed for approximately 5 seconds. This display shows AMETEK STC and Chatillon® logos along with Gauge Model, Firmware Version and the Last Calibration Date.

Battery

The DF3 Series contains a rechargeable Lithium Ion battery.

Battery Life

Run time: 25 hours (full LCD brightness, **no use** of remote modules) **Note:**

- Dimming the display will further extend the battery charge.
- Use of remote modules will reduce battery charge.

Charging:

Charge Time: 4 hours

To charge the gauge, plug the USB cable into any suitable USB port or charger.

Charging Temperature:

The battery can only be charged in the temperature range of 10 to 45°C. If the gauge is outside of this range, charging will automatically be disabled. Charging will resume when the temperature returns to the acceptable range. It is not required to drain the battery before recharging.

Battery Safety and Precautions

Failure to follow these safety precautions can result in damage to the battery which can cause fire or explosion

- Do not operate the gauge outside of the specified operating temperature range.
- Do not place the gauge near fire, sources of heat or high temperature locations.
- Do not expose the gauge to water or allow it to get wet.
- Do not damage the enclosure.
- Do not disassemble the gauge or attempt to replace the battery.
- Do not operate the gauge in a hermetically sealed location.
- Immediately discontinue use of the gauge if it emits an unusual smell, heats, or otherwise appears abnormal.

Manual Handling & Safety

In the event that battery leaks:

- Avoid getting fluid on skin and then touching eyes/face
- Should the user experience contact to eyes/face, rinse well with water and seek immediate first aid or health care

Display Layout

The DF3 Series digital force gauge features a TFT-LCD full-color display with backlight.

Display Options

The DF3 Series gauge features the following display options designed to enhance operation and performance:

- Display Orientation
- Display Backlight
- Hide Measurements

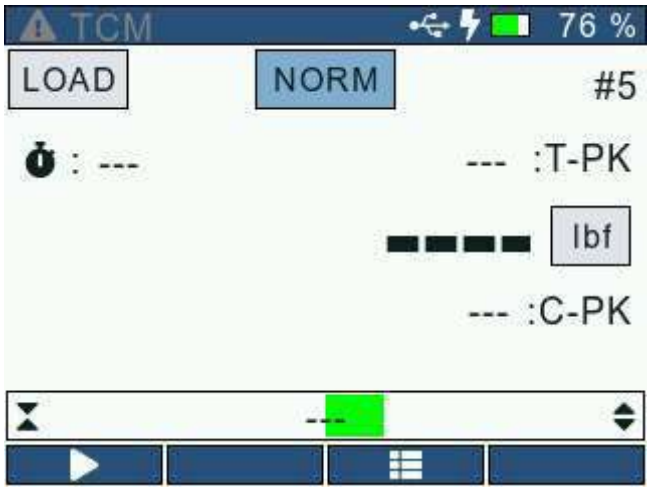
Display Orientation

DF3 Series digital force gauges give the operator an option to invert the gauge display. This feature makes it easier for the user to analyze the readings when the gauge is held upside-down. When the display is inverted, the Navigation and Function key functionalities are swapped. The gauge display orientation can be changed from the General (GeneralScreen.html) screen.

Display Backlight

The gauge display backlight can be adjusted from the General (GeneralScreen.html) screen depending on the lighting conditions. The user can enter a value between (0 -100) based on his/her preference. The user can also dim the gauge backlight using the Power key when the gauge is not in use to improve the battery life.

Hide Measurements

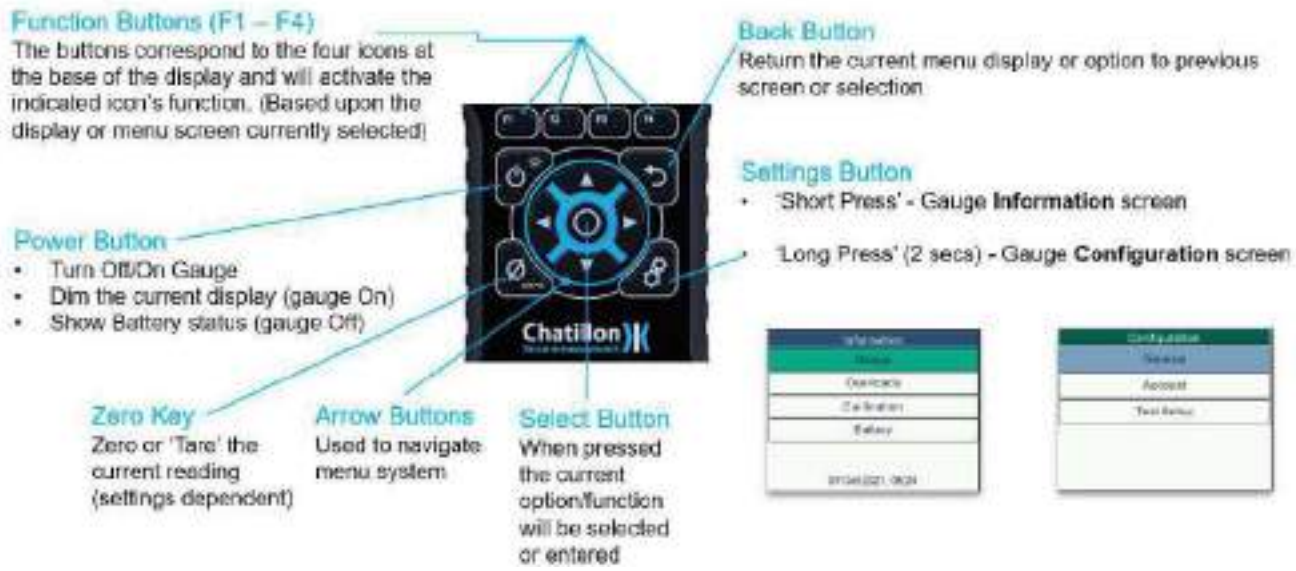


This function allows the user to “hide” the readings displayed on screen. The “hide” function is useful for blind study applications. This setting can be turned ON/OFF from the Test Setup: Display (TestSetupDisplay.html) screen.

NOTE: Higher Display Backlight reduces the battery life.

Keypad Operation

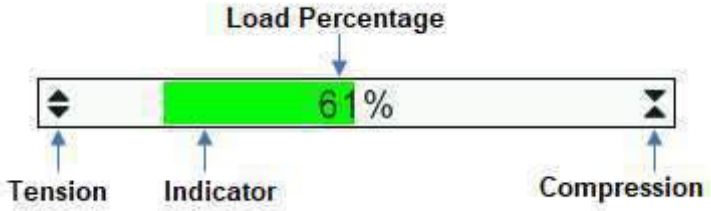
The DF3 Series gauge has nine (9) keys and a navigation pod.



Note - Button functionalities may vary depending on the current screen and gauge state.

Load Bar Graph

The Load Bar Graph gives the user a visual indication of the absolute load being applied to the gauge. The percentage of applied load with respect to the maximum load capacity of the gauge is also displayed at the centre of the load bar graph. In addition to this, the direction of the load bar graph indicates the type of Load applied i.e compressive or tensile.



The colour of the load bar graph changes depending on the load applied.

When the applied load is upto **75%** of the maximum range, the load bar graph is **Green** in colour.

When the applied load is between **75% and 90%** of the maximum range, the load bar graph is **Yellow** in colour.

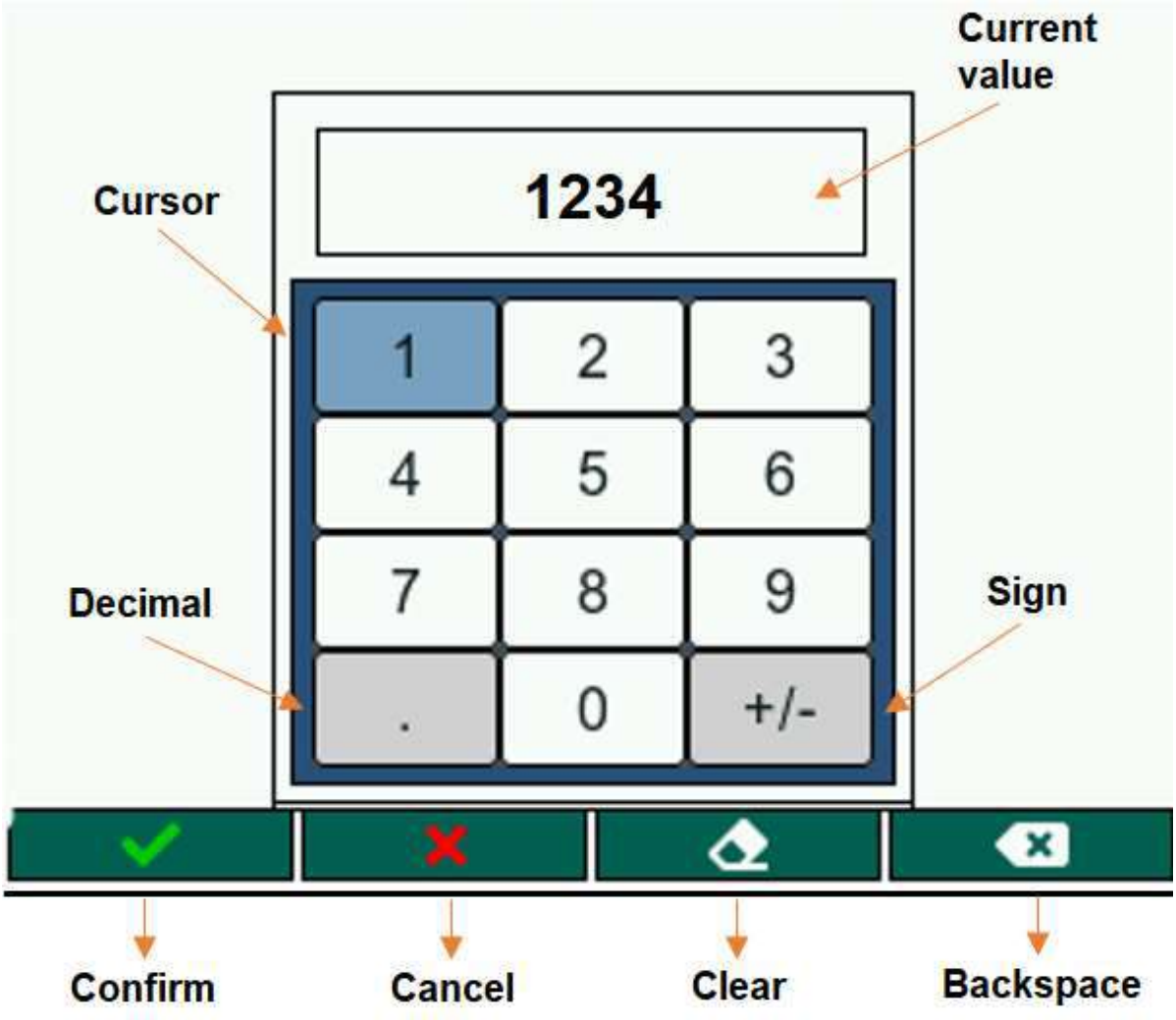
When the applied load is greater than **90%** of the maximum range, the load bar graph is **Red** in colour.


TCM
76 %
LOAD
NORM
#1
0.0000 :T-PK
-49.0000
lbf
-49.0000 :C-PK
98%


TCM
76 %
LOAD
NORM
#1
49.0000 :T-PK
49.0000
lbf
0.0000 :C-PK
98%

Numeric Keypad

When a setting requires the user to input a numeric value, for e.g. Preload value or Trigger point, the numeric keypad (NumericKeypad.html) is set up on the screen to accept an input from the user. The Navigation keys (KeypadOperation.html) can be used to move the cursor on the numeric keypad (NumericKeypad.html) and the Select key (KeypadOperation.html) has to be clicked to confirm the selection. In addition to digits 0-9, the numeric keypad (NumericKeypad.html) also includes a '.' and '+/-'.



Key features of the numeric keypad (NumericKeypad.html) -

- When the numeric keypad (NumericKeypad.html) is set-up, the current value is displayed on screen. The user can edit the current input by erasing the last value using the F4 key or overwrite the previous input by entering the new value
- The '.' button is enabled only when the selected setting accepts a floating point value and is disabled once a decimal point has already been input. If the setting doesn't accept a floating point input, the '.' button will be greyed out and disabled
- The '+/-' button is enabled only when the selected setting accepts a negative value and it can be used to toggle the sign of the input. If the setting doesn't accept a negative value, the '+/-' button will be greyed out and disabled
- The Function buttons are used perform specific functions when a numeric keypad (NumericKeypad.html) is set-up. The functionality of each button is displayed on the bottom of the screen

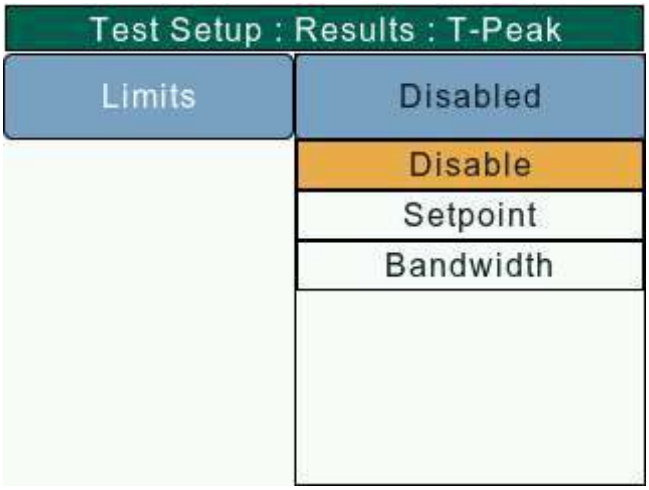
- The F1 button is used to save the user input and close the numeric keypad (NumericKeypad.html)
- The F2 button is used to close the numeric keypad (NumericKeypad.html) without saving the user input
- The F3 button is used to clear the user input completely
- The F4 button is used to erase the last value of the input
- The Zero, Settings and Back buttons are disabled when a numeric keypad (NumericKeypad.html) is setup on screen

To read on about button functionalities, please refer to the Gauge Buttons (KeypadOperation.html) section. The table below shows the configuration settings that require a numeric input from the user -

Screen	Setting	Dot (.) Enabled	Sign (+/-) Enabled
General	Brightness		
	Auto Shutdown		
	Auto Dimming		
Accounts	Password		
	Change Password		
Test Setup : Configure : Peak Detection	Peak Threshold		
Test Setup : Configure : Load Averaging	Preload Value	✓	
	Timeout		
Test Setup : Configure : Break Detection (DFS Only)	Trigger Point	✓	
	Percentage Drop		
Test Setup : Configure : Load Safety Limit	Compression Setpoint	✓	
	Tension Setpoint	✓	
Test Setup : Start/Stop	On Load	✓	
	On Time		
Test Setup : Results	High Setpoint	✓	
	Low Setpoint	✓	
	Nominal Value	✓	
	Bandwidth %		

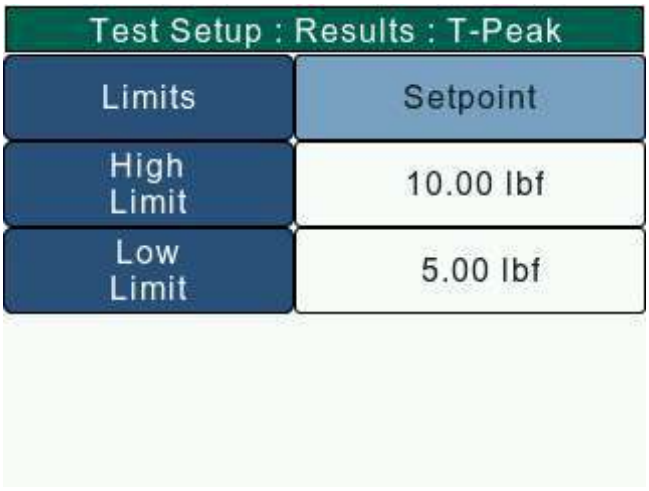
Pass/Fail Limits

The DF3 Series force gauge allows the user to set separate Pass/Fail limits for each result in a test. For e.g. we can set separate limits for T-Peak and Load Averaging and the test status will depend on whether the T-Peak or the Load Average value lie within the corresponding limits. Moreover, the user can also disable Pass/Fail limits if they are not of interest for a particular result.



Pass/Fail limits can be configured from the Test Setup: Results (TestSetupResults.html) screen. This screen allows the user to select a particular result and configure the Pass/Fail limit as per requirement. The Pass/Fail limits can be disabled or set using either the Setpoint or the Bandwidth method.

Setpoint Method

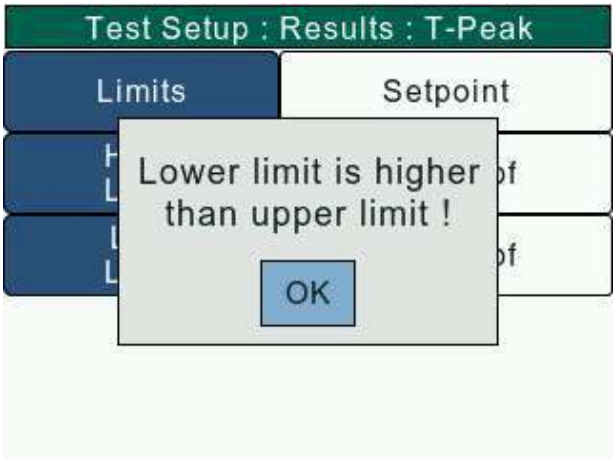


The Setpoint method allows the user to set high and low pass/fail limits. Under this method, the user will set values for the High and Low setpoints using the numeric keypad (NumericKeypad.html).

Example: The DF3 Series will display green PASS if the measured result is 11.2 lbf and the upper setpoint was 12.0 lbf and the lower setpoint was 10.0 lbf.

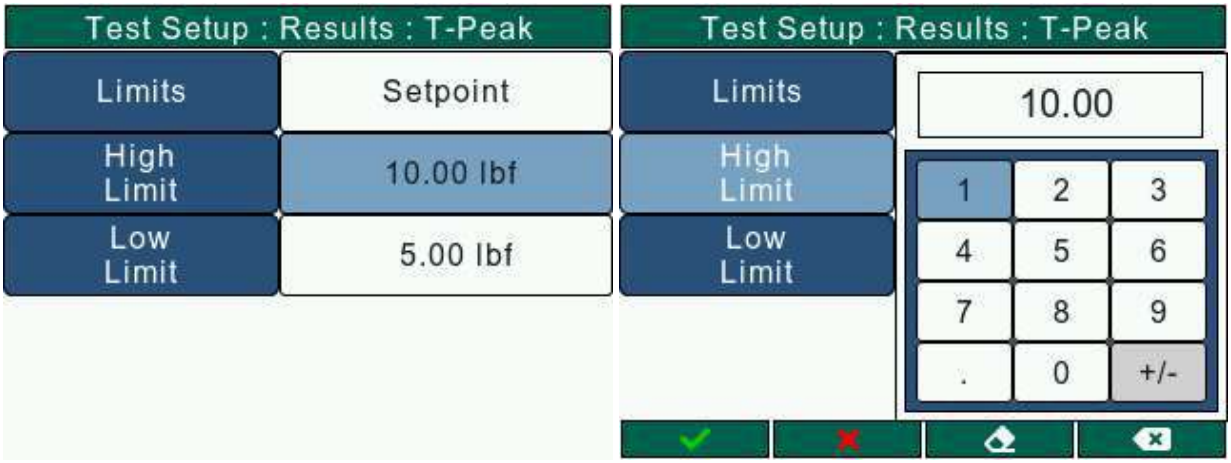
Conversely, if the measured result was 9.8 lbf, the gauge would display red FAIL.

Note - When the limits are set using the Setpoint method, the user must make sure that the High setpoint value is greater than the Low setpoint value. The gauge will throw an error if this condition isn't met.



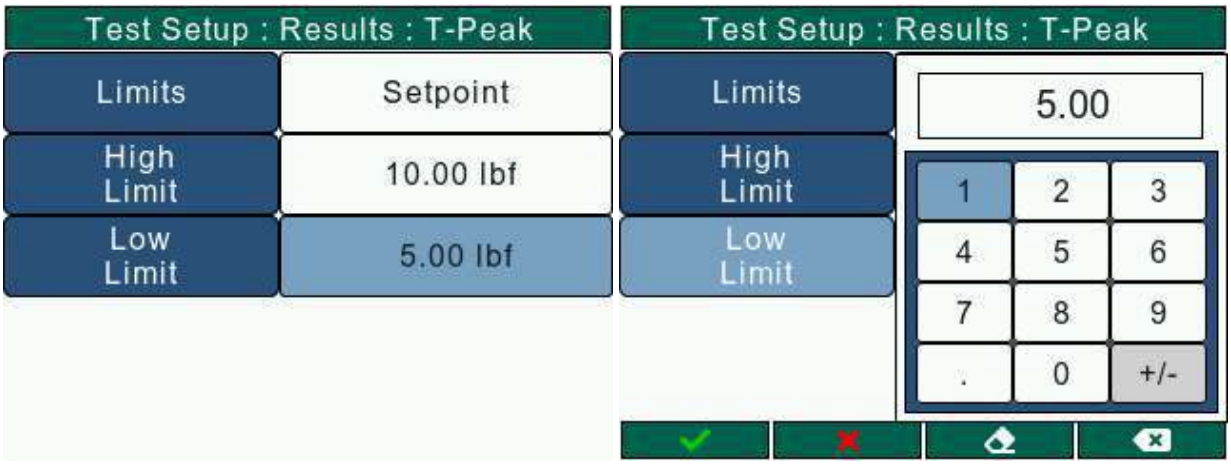
High Setpoint

The High Setpoint determines the upper Pass/Fail limit. If the final result exceeds this value, the result status is **FAIL_HIGH**. The user must make sure that the entered value is less than the maximum gauge capacity.

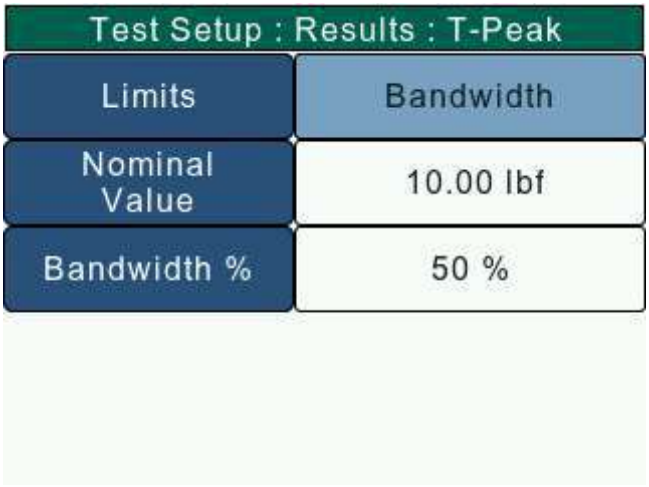


Low Setpoint

The Low Setpoint determines the lower Pass/Fail limit. If the final result drops below this value, the result status is **FAIL_LOW**. The user must make sure that the entered value is less than the maximum gauge capacity.



Bandwidth Method comment (<): <> (Bandwidth Method)



The Bandwidth method allows the user to set pass/fail limits with respect to a Nominal Value. Under this method, the user will set values for the Nominal value and Bandwidth percentage using the numeric keypad (NumericKeypad.html). Based on the inputs, the high and low limits are set as follows -

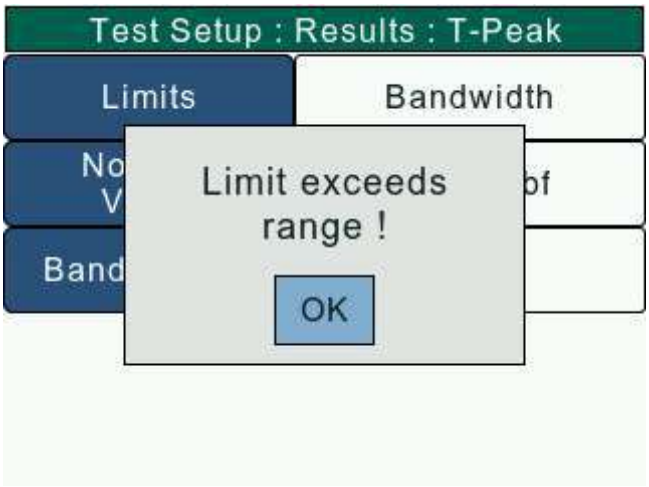
H.L = N.V + (N.V * B.P / 100)
L.L = N.V - (N.V * B.P / 100)

H.L - High Limit
L.L - Low Limit
N.V - Nominal Value
B.P - Bandwidth Percentage

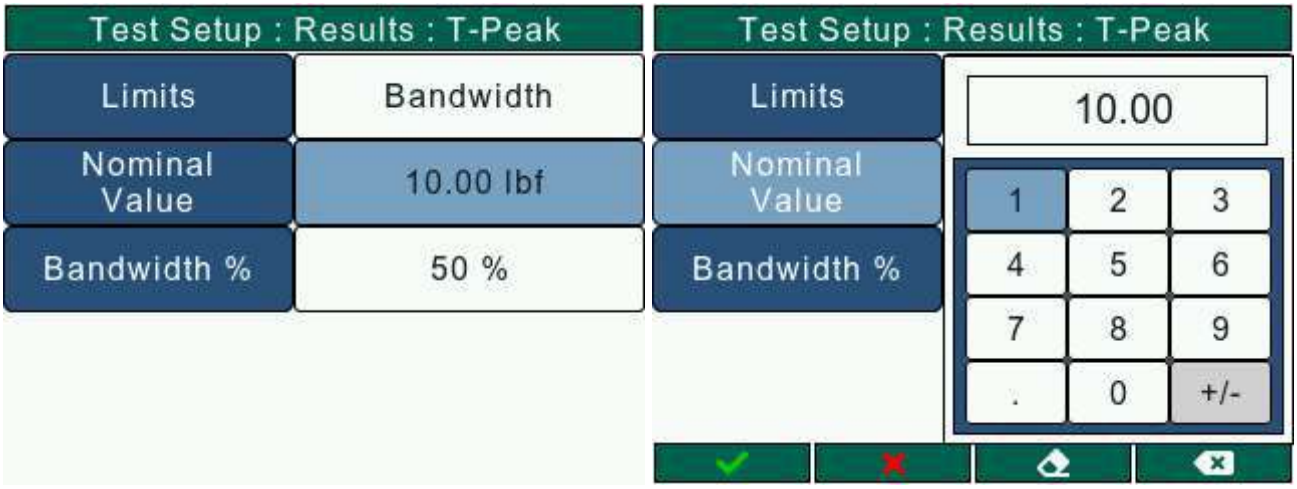
Example: The DF3 Series will display green PASS if the measured result is 9.8 lbf and the Nominal Value was 10.0 lbf and the Bandwidth is 10%.

Conversely, if the measured result was 8.9 lbf, the gauge would display red FAIL.

Note - When the limits are set using the Bandwidth method, the user must make sure that the High and Low limits as per the formula mentioned above must not exceed the maximum gauge capacity. The gauge will throw an error if this condition isn't met.

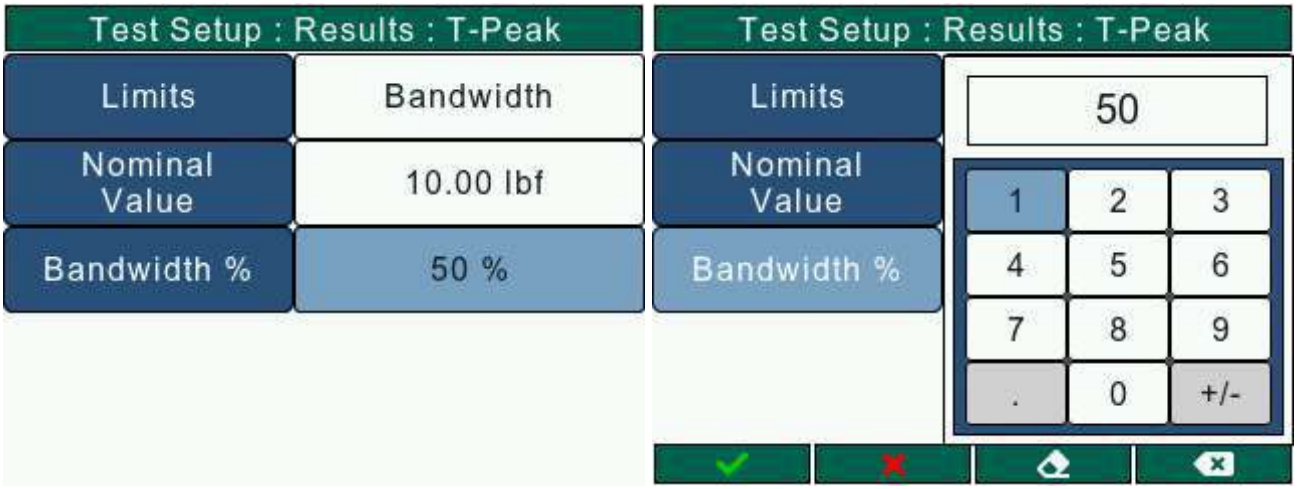


Nominal Value



The Nominal Value determines the midpoint around which the bandwidth is calculated. The user must make sure that the entered value is such that the limits are lower than the maximum gauge capacity.

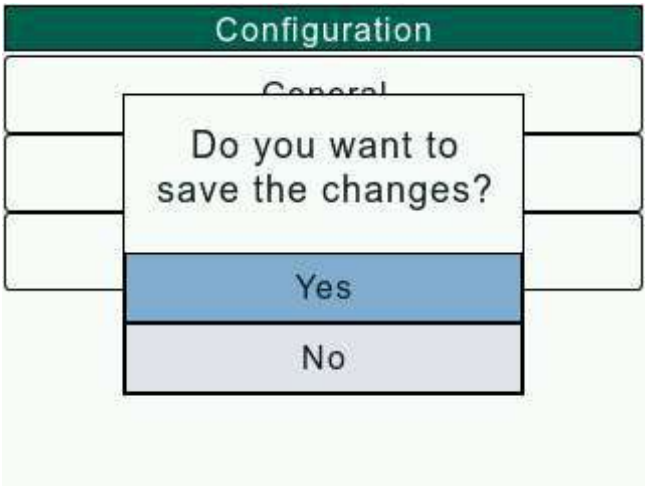
Bandwidth Percentage



The Bandwidth Percentage determines the percentage of Nominal value that'll be added to and subtracted from the Nominal value in order to set the high and low limits respectively. The user must make sure that the entered value is such that the limits are lower than the maximum gauge capacity.

Saving Changes

When changes are made to the configuration settings, the DF3 Series gauge gives the user an option to save the changes made. While exiting the Configuration (ConfigurationScreen.html) screen, if any configuration settings have been changed, a pop-up shows up on the gauge display asking the user whether they want to save the changes or not. This is done in order to prevent any unintended configuration changes.



If Yes is selected, the changes made by the user get saved and persist through boot-ups.

If No is selected, the changes made by the user get discarded and the old values persist.

Load Safety Limits

The Load Safety Limits allow the user to set a Compression and Tension limit to ensure the device safety. Load Limits are useful for protecting your gauge or testing system from damage or to simply alert you that the gauge or system has exceeded a setpoint value.

When the Tones (TestSetupInit.html) setting is enabled, the gauge provides an audible alarm whenever a Load Safety Limit is exceeded. On the Home (HomeScreen.html) screen, an 'Over limit' message shows up on the screen when the applied load is greater than the Load Safety Limits.

The Load Safety Limit can be configured from the Test Setup: Configure (TestSetupConfig.html) screen.

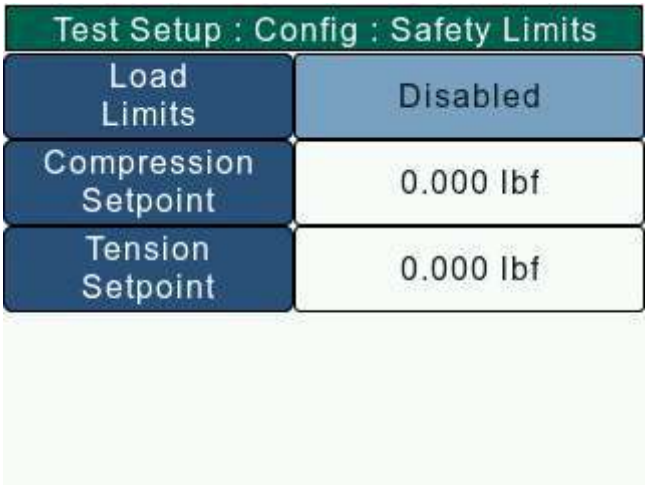
Load Safety Limit Setup

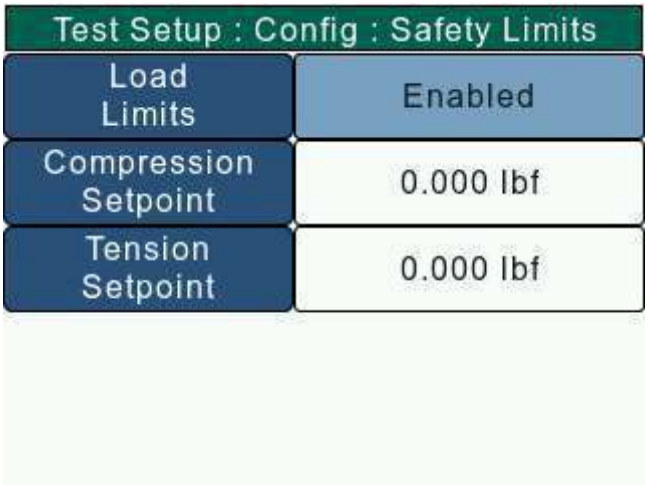
To setup the Load Safety Limits function, the user must enable the Load Safety Limits from the Test Setup: Configure (TestSetupConfig.html) screen. The Load Safety Limit (SafetyLimits.html) screen allows the user to configure the following settings:

- Enable
- Compression Setpoint
- Tension Setpoint

Enable

On the Test Setup: Config: Load Safety Limit (SafetyLimits.html) screen, use the Navigation key to set the cursor on the Load Safety Limits setting. To change the Load Safety Limits state, press the select key to toggle between enabled and disabled. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Safety Limits to enabled or disabled.



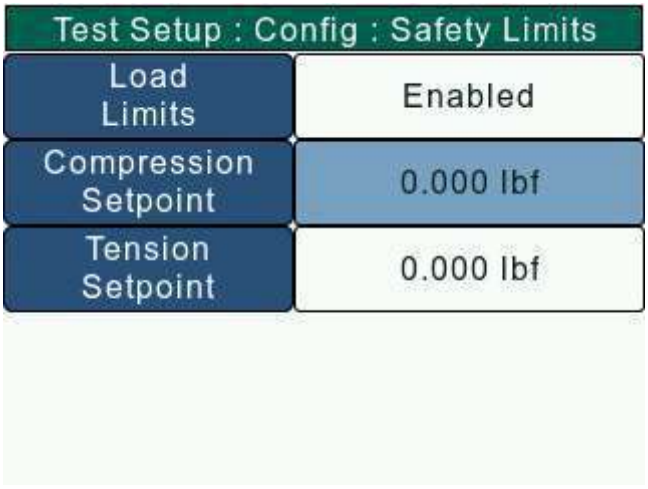


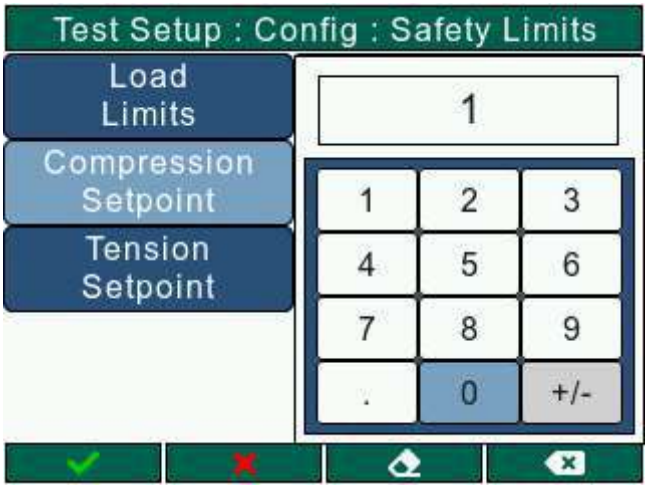
When enabled, the gauge will notify and the user will get to know the load safety limit is reached.

When disabled, the gauge will not notify.

Compression Setpoint

The Compression Setpoint is the load value re-presenting the highest COMPRESSION load value that you want your gauge to measure prior to it giving a Load Limit indication. On the Test Setup: Initialize (TestSetupInit.html), You have the option of enabling or disabling the Safety Limits Buzzer. If ON, the Buzzer provides you with an audible indicator when the load measurement exceeds a Compression Setpoint.





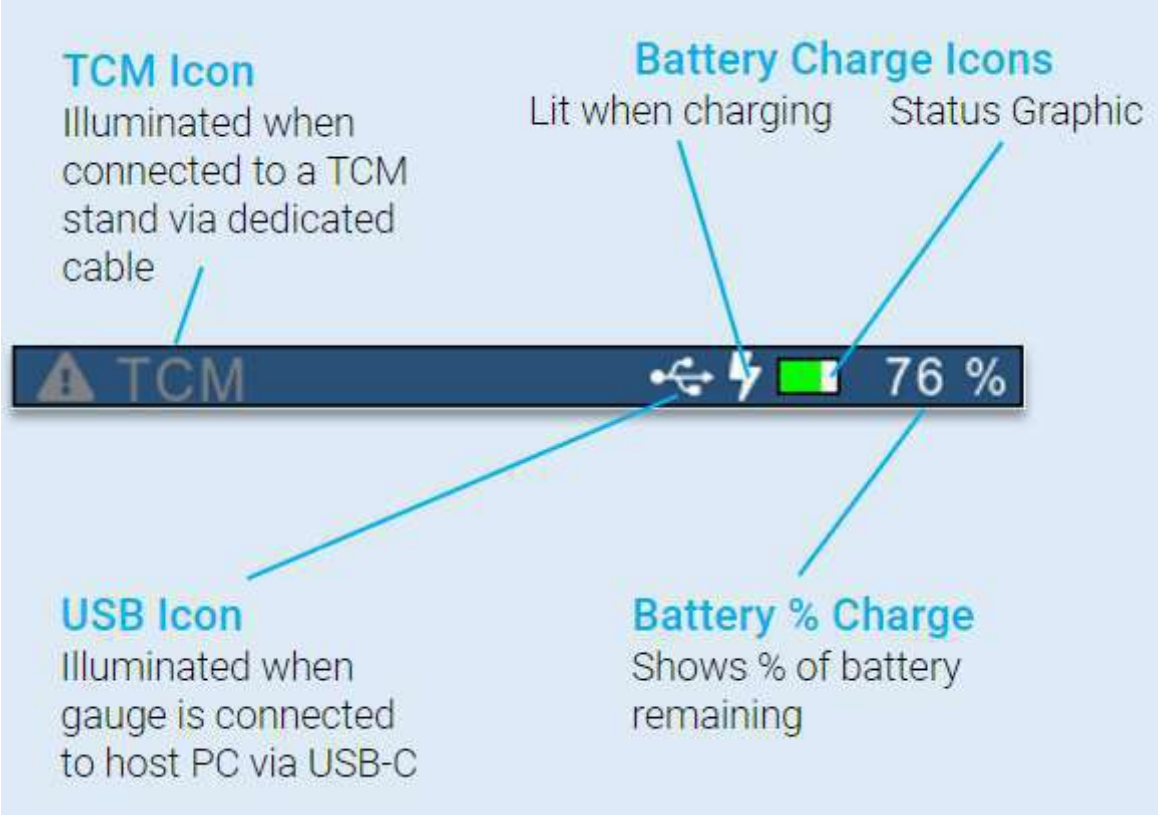
On the Test Setup: Config: Load Safety Limit (SafetyLimits.html) screen, use the Navigation key to set the cursor on the Compression Setpoint. To set the Compression Setpoint, press the Select key to open the numeric keypad (NumericKeypad.html). The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Compression setpoint to set.

Tension Setpoint

The Tension Setpoint is the load value re-presenting the highest TENSION load value that you want your gauge to measure prior to it giving a Load Limit indication. On the Test Setup: Initialize (TestSetupInit.html), You have the option of enabling or disabling the Safety Limits Buzzer. If ON, the Buzzer provides you with an audible indicator when the load measurement exceeds a Tension Setpoint.

On the Test Setup: Config: Load Safety Limit (SafetyLimits.html) screen, use the Navigation key to set the cursor on the Tension Setpoint. To set the Tension Setpoint, press the Select key to open the numeric keypad (NumericKeypad.html). The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Tension setpoint to set.

Status Bar



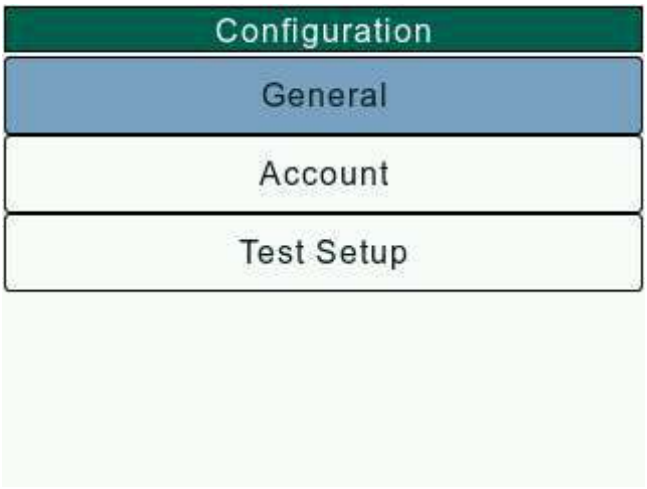
The Status Bar has the following icons:

- Battery Percentage
- Battery Indicator
- Charger Plugged
- USB
- Warning

Configuration Screen

The Configuration (ConfigurationScreen.html) screen allows the user to configure the device as per requirement. It navigates the user to screen that provide an option to customize the gauge based on the user's preferences.

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen.



The Configuration (ConfigurationScreen.html) screen consists of 3 sub-screens that help the user customize specific gauge functionalities–

- General (GeneralScreen.html)
- Accounts (AccountsScreen.html)
- Test Setup (TestSetupScreen.html)

Accounts Settings Option

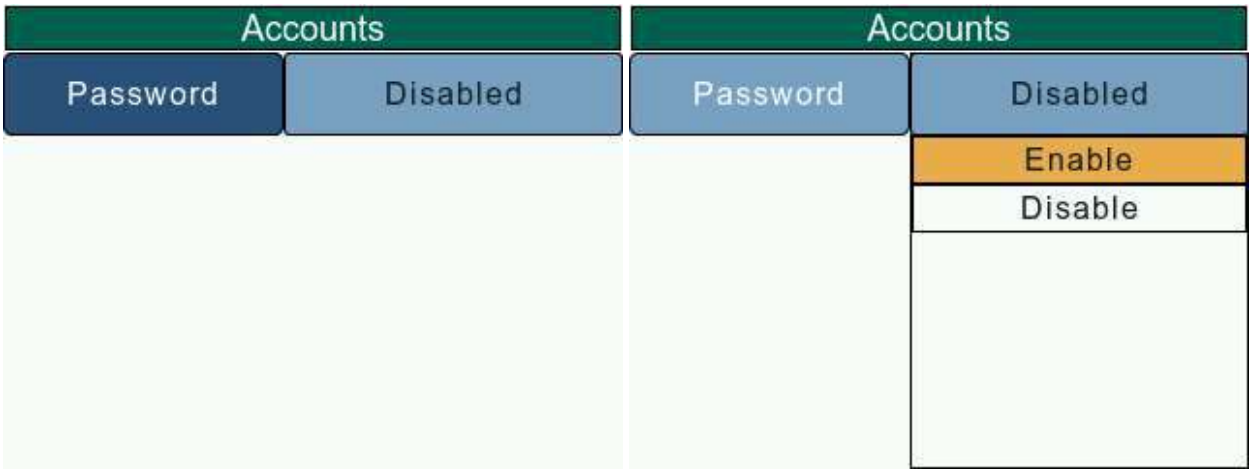
From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Accounts option and press the Select key to load the Accounts (AccountsScreen.html) screen.

The Accounts screen can be used to set the following parameters –

- Password Enable
- Change Password

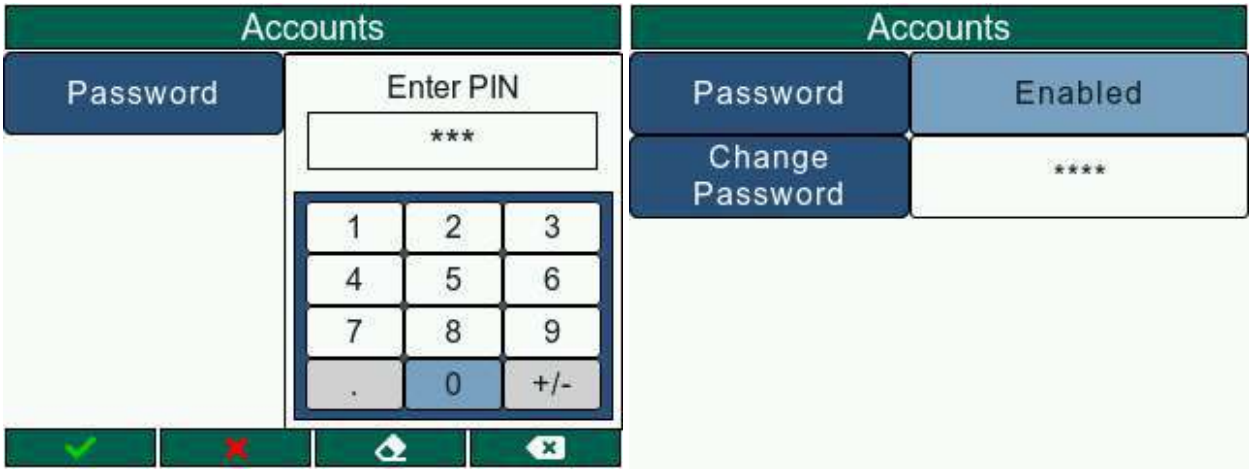
Password Enable

The user can prevent any changes to the Device configurations by enabling the Password setting. Once enabled, the user needs to input the account password to enter the Configuration (ConfigurationScreen.html) screen.



To Enable/Disable password protection, navigate to the Accounts (AccountsScreen.html) screen and select the Password 'Enable' option. The display will show the 'Enter PIN' screen. Using the navigation keys, position the cursor to each desired digit and press the Select key to enter and then navigate to the next one (a maximum of 4 digits is currently permitted). When the fourth digit is entered, press the Green Tick (F1 key) to save and return to the previous screen. Pressing the Red X (F2 key) will disregard pin entry and return to previous menu. The Eraser button (F3 key) will wipe all currently entered digits. The Backspace button (F4 key) will delete the last digit entered.

The password settings are only updated when the user exits the Configuration (ConfigurationScreen.html) screen and selects 'Yes' to save changes prompt.

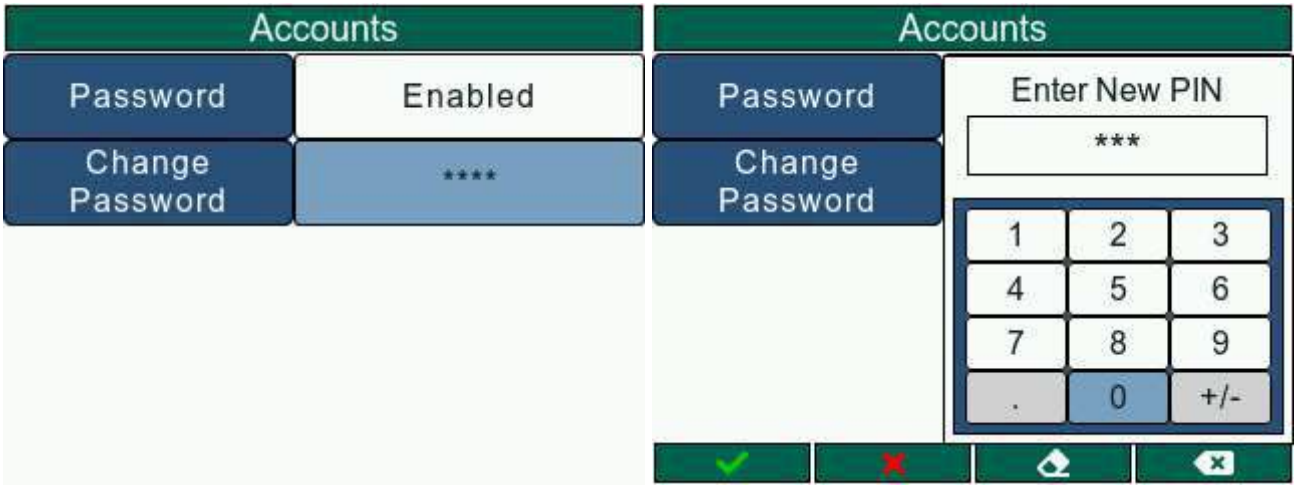


In case the entered password is incorrect, the gauge will throw an error message on screen and the setting will remain unchanged.

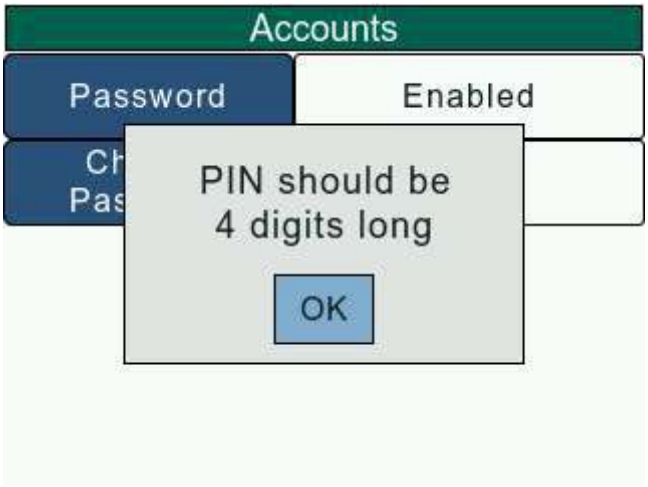
NOTE : The factory default pin is "0000".

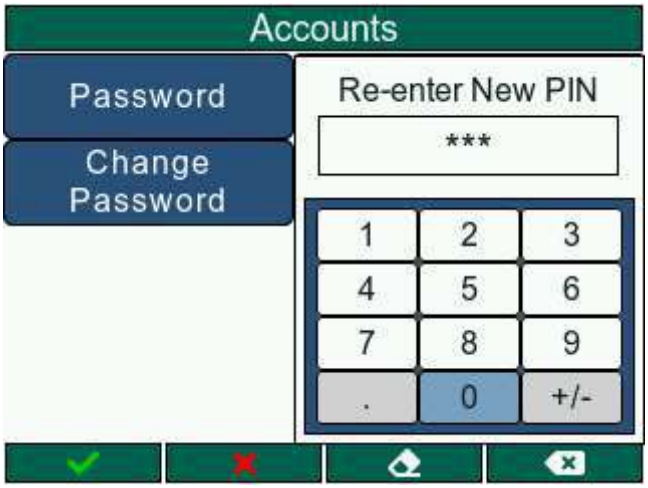
Change Password

The DF3 Series gauges give the users an option to set a 4-digit password to prevent any unauthorized changes to the Test Configurations.

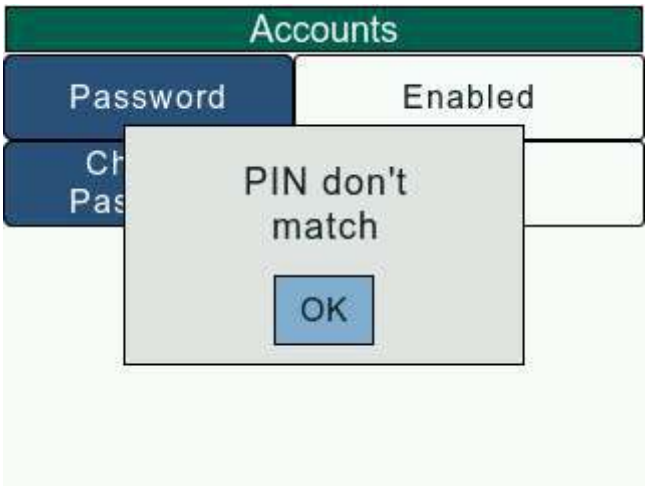


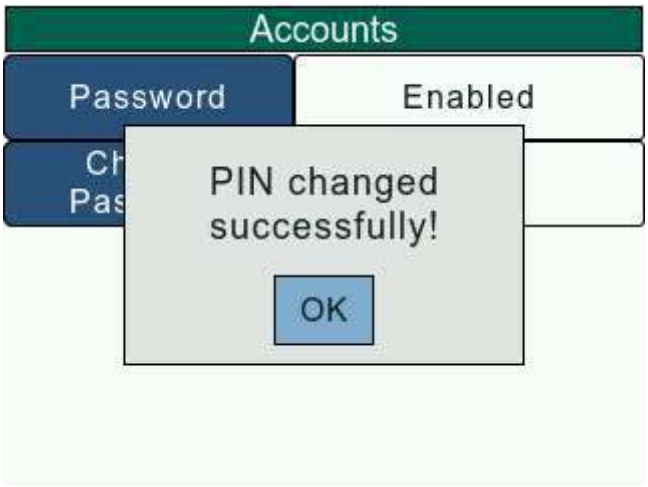
To change the Password, navigate to the Accounts (AccountsScreen.html) screen and use the Navigation key to set cursor on Change Password. The Change Password option will be available only if the Password is already enabled. This is to prevent any unauthorized personnel to change this setting. Press the Select key to open the 'Enter New PIN' Keypad (NumericKeypad.html). Enter the new 4-digit pin and press the F1 key to confirm input. In case the entered password is shorter than 4-digits, the gauge will throw an error message on screen and the setting will remain unchanged.





If the entered password is valid, the user will have to re-enter the new PIN to update the password. In case the passwords don't match, the gauge will throw an error message prompting the user.





If the entered passwords are valid, the gauge will throw a 'PIN changed successfully' message and update the account password. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes to change the password.

General Settings Option

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the General option and press the Select key to load the General (GeneralScreen.html) screen.

The General screen can be used to set the following parameters –

- Language
- Key Tones
- Display
- Brightness
- Zero On Start
- Auto Shutdown
- Auto Dimming

Language

The Language setting allows the user to change the gauge language.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Language setting. To change the language, press the Select key to open a list with available languages. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the gauge language to change.

The DF3 Series supports following languages -

- English
- French
- German
- Spanish
- Chinese

Key Tones

The Key Tones setting allows the user to switch ON/OFF key press buzzer.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Key Tones setting. To change the Key Tones state, press the Select key to toggle the between ON/OFF states. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Key Tones state to change.

If the Key Tones setting is ON, the gauge will notify the user on each key press with a single beep.

If the Key Tones setting is OFF, the user isn't notified on key press.

Display

The Display setting allows the user to change the display orientation.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Orientation setting. To change the orientation, press the Select key to toggle between Normal and Inverted display. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the display orientation to change.

If the Orientation option is Normal, displayed information is presented right-side down. The Function keys map to the function tags.

If the Orientation option is Inverted, displayed information is presented upside down. The Function and Navigation key functionalities are swapped.

Brightness

The Brightness setting allows the user to adjust the display backlight.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Brightness setting. To change the brightness, press the Select key to open a numeric keypad (NumericKeypad.html). F1 key should be pressed to confirm the input and F2 key can be pressed to close the numeric keypad (NumericKeypad.html). The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the display backlight to change.

The user can enter a value between (0 -100) based on his/her preference.

Zero On Start

The Zero On Start setting allows the user to select what values to be Zeroed when the device boots up.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Zero On Start setting. To change the Zero On Start setting, press the Select key to open a list with available options. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Zero On Start setting to change.

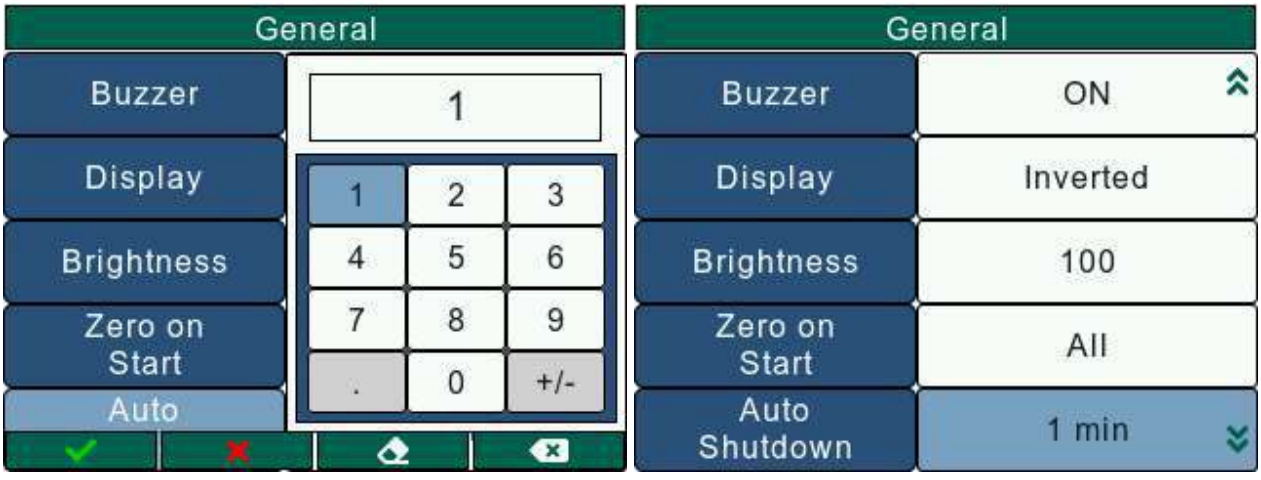
The DF3 Series allows the user to select one of the following readings as the Zero On Start option -

- None
- Load
- Results
- All

Auto Shutdown

The Auto Shutdown setting, when enabled, powers down the gauge after a set duration of inactivity. When enabled, the user can set the Auto Shutdown Timeout, which determines the duration of inactivity after which the gauge powers down.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Auto Shutdown setting. To change the Auto Shutdown setting, press the Select key to open a list to enable/disable Auto Shutdown. If enabled, a numeric keypad (NumericKeypad.html) is setup to accept the Auto Shutdown timeout. F1 key should be pressed to confirm the input and F2 key can be pressed to close the numeric keypad (NumericKeypad.html). The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Auto Shutdown setting to change.

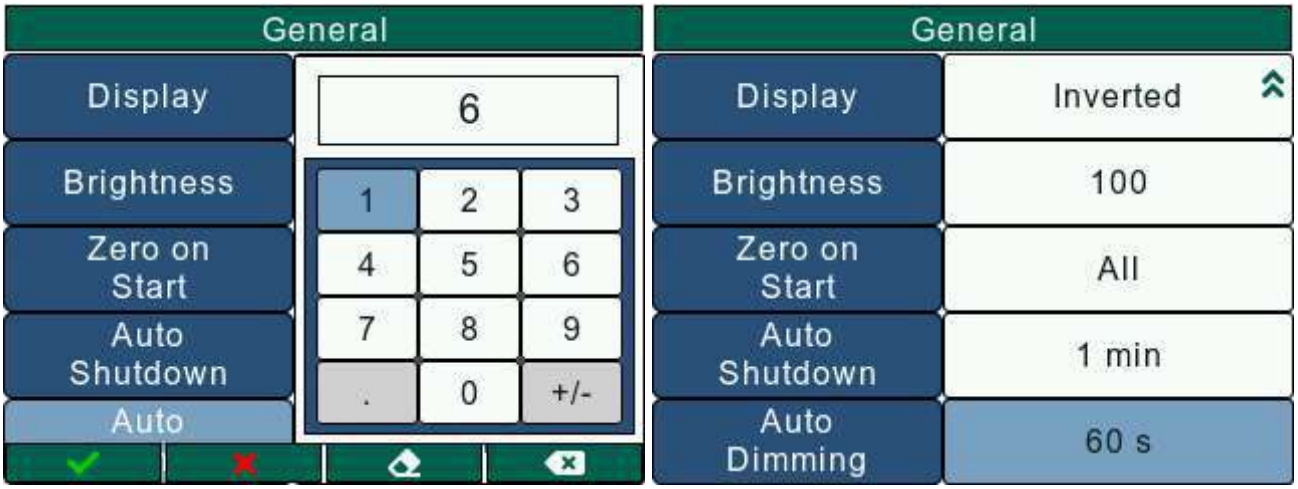


The user can set a value between 1 - 300 minutes as the Auto Shutdown timeout.

Auto Dimming

The Auto Dimming setting, when enabled, dims the display backlight to minimum after a set duration of inactivity. When enabled, the user can set the Auto Dimming Timeout, which determines the duration of inactivity after which the display backlight is dimmed.

On the General (GeneralScreen.html) screen, use the Navigation keys to set the cursor on the Auto Dimming setting. To change the Auto Dimming setting, press the Select key to open a list to enable/disable Auto Dimming. If enabled, a numeric keypad (NumericKeypad.html) is setup to accept the Auto Dimming timeout. F1 key should be pressed to confirm the input and F2 key can be pressed to close the numeric keypad (NumericKeypad.html). The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Auto Dimming setting to change.



The user can set a value between 10 - 3600 seconds as the Auto Dimming timeout.

Test Setup Screen

The DF3 Series gauges allow the user to setup a testing environment suitable for numerous testing scenarios. The Test Setup screen provides an easy-to-use interface to customize the test parameters as per requirement.

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup screen.

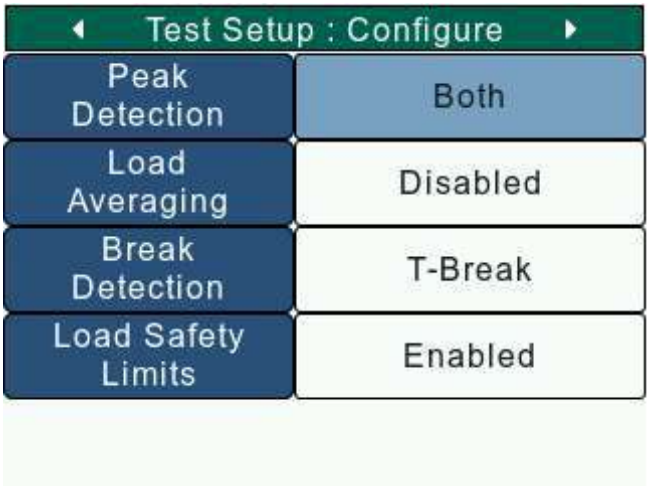
The Test Setup screen consists of 6 sub-screens, each of which focuses on customizing a set of similar testing parameters –

- Test Setup: Initialize (TestSetupInit.html)
- Test Setup: Filter (TestSetupFilter.html)
- Test Setup: Configure (TestSetupConfig.html)
- Test Setup: Start/Stop (TestSetupStartStop.html)
- Test Setup: Results (TestSetupResults.html)
- Test Setup: Display (TestSetupDisplay.html)

The user can use Left/Right navigation keys to switch between these sub-screens.

Test Setup Config

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup screen. Use the Left/Right key to navigate to the Test Setup: Configure (TestSetupConfig.html) screen.



The Test Setup: Configure (TestSetupConfig.html) screen can be used to set the following test parameters –

- Peak Detection (PeakDetection.html)
- Load Averaging (LoadAveraging.html)
- Break Detection (BreakDetection.html)
- Safety Limits (SafetyLimits.html)

NOTE - Only results that have been enabled in the Test Setup: Configure (TestSetupConfig.html) screen will be available in the Test Setup: Results (TestSetupResults.html) screen.

Test Setup: Display

The Test Setup: Display (TestSetupDisplay.html) screen lets to user setup the Home (HomeScreen.html) screen display to suit the current Test Configuration.

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup (TestSetupScreen.html) screen. Use the Left/Right key to navigate to the Test Setup: Display (TestSetupDisplay.html) screen.

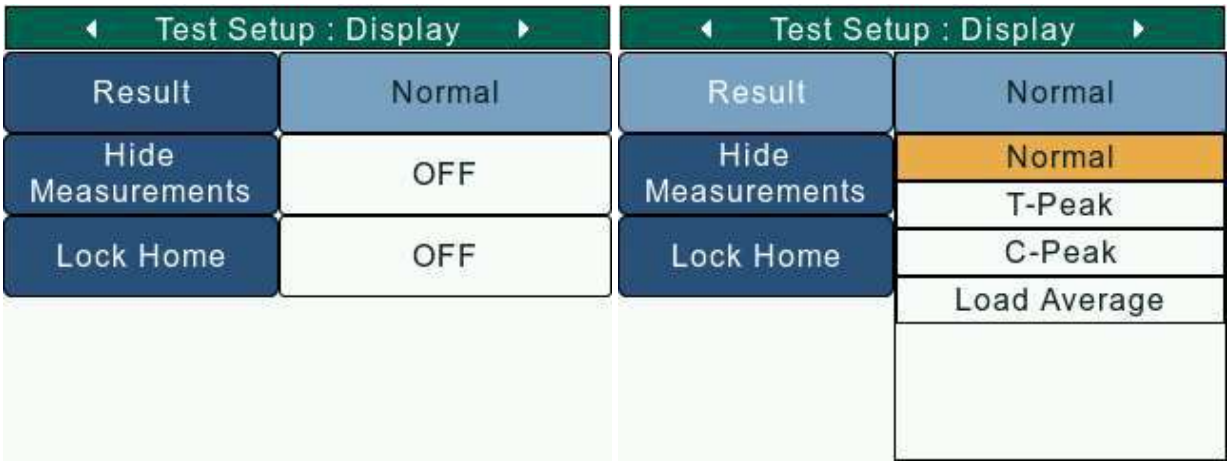
The Test Setup: Display (TestSetupDisplay.html)screen can be used to set the following test parameters –

- Result
- Hide Measurements
- Lock Home

Result

The Result setting determines the default result that will load when the user navigates to the Home (HomeScreen.html) screen. The user can change the current result from the Home (HomeScreen.html) screen but this setting determines the master Result that'll setup everytime the user leaves and re-loads the Home (HomeScreen.html) screen.

On the Test Setup: Display (TestSetupDisplay.html) screen, use the Navigation keys to set the cursor on the Result setting. To change the result, press the Select key to open a list with available result. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Result setting to change.

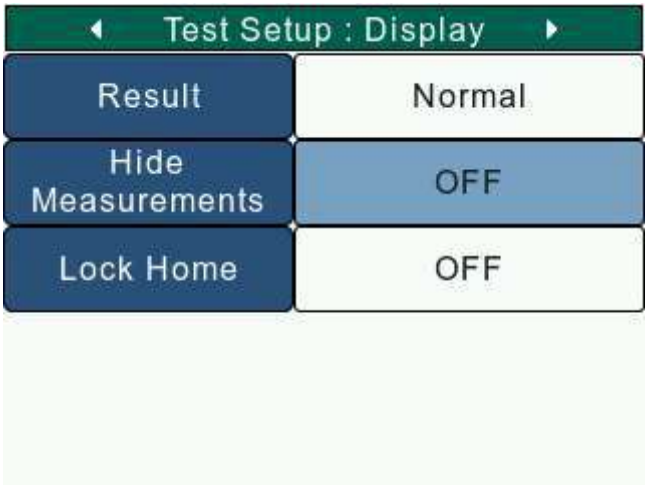


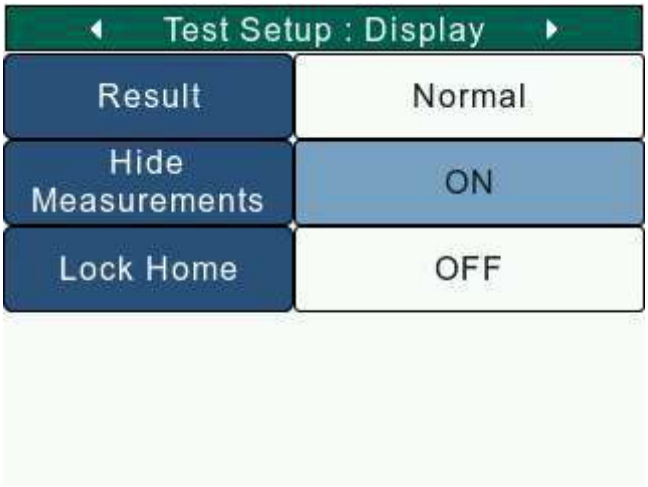
The available results depend on the Gauge Model and the tests that have been enabled in Test Setup: Config (TestSetupConfig.html).

Hide Measurements

The Hide Measurements setting allows the user to "hide" results and readings on the Home (HomeScreen.html) screen. The Hide Measurement function is useful for blind study applications.

On the Test Setup: Display (TestSetupDisplay.html) screen, use the Navigation keys to set the cursor on the Hide Measurments setting. To change the state of Hide Measurements, press the Select key to toggle between ON and OFF. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Hide Measurement setting to change.



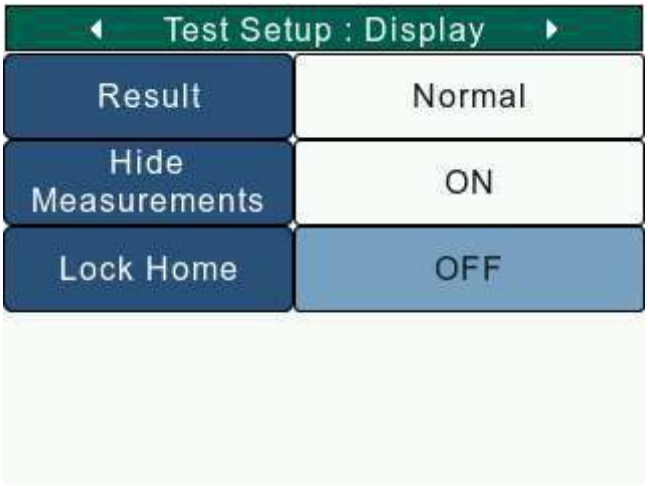


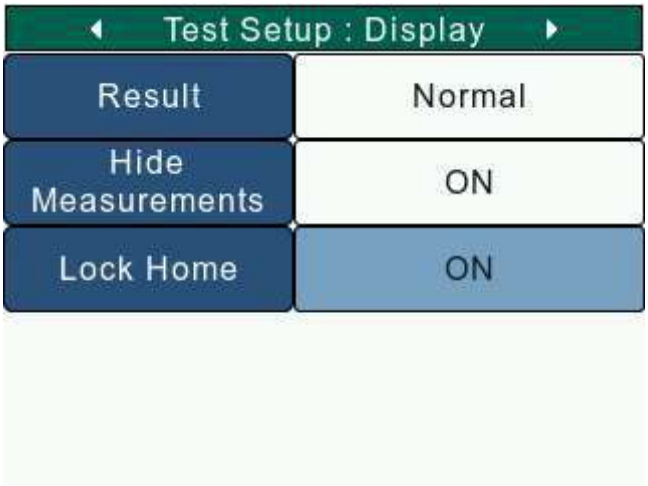
If the Hide Measurement setting is ON, all readings on the Home (HomeScreen.html) screen will be masked with '---'.

Lock Home

The Lock Home Setting will restrict the user from changes on the Home (HomeScreen.html) screen. This is useful in making sure that the current unit and result aren't changed while on the Home (HomeScreen.html) screen.

On the Test Setup: Display (TestSetupDisplay.html) screen, use the Navigation keys to set the cursor on the Lock Home setting. To change the state of Lock Home, press the Select key to toggle between ON and OFF. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Lock Home setting to change.





If the Lock Home setting is ON, the gauge will throw a message intimating the user that changes have been disabled.

Test Setup: Filter

The Test Setup: Filter (TestSetupFilter.html) screen allows the user to adjust the filtering applied to the data.

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup (TestSetupScreen.html) screen. Use the Left/Right key to navigate to the Test Setup: Filter (TestSetupFilter.html) screen.

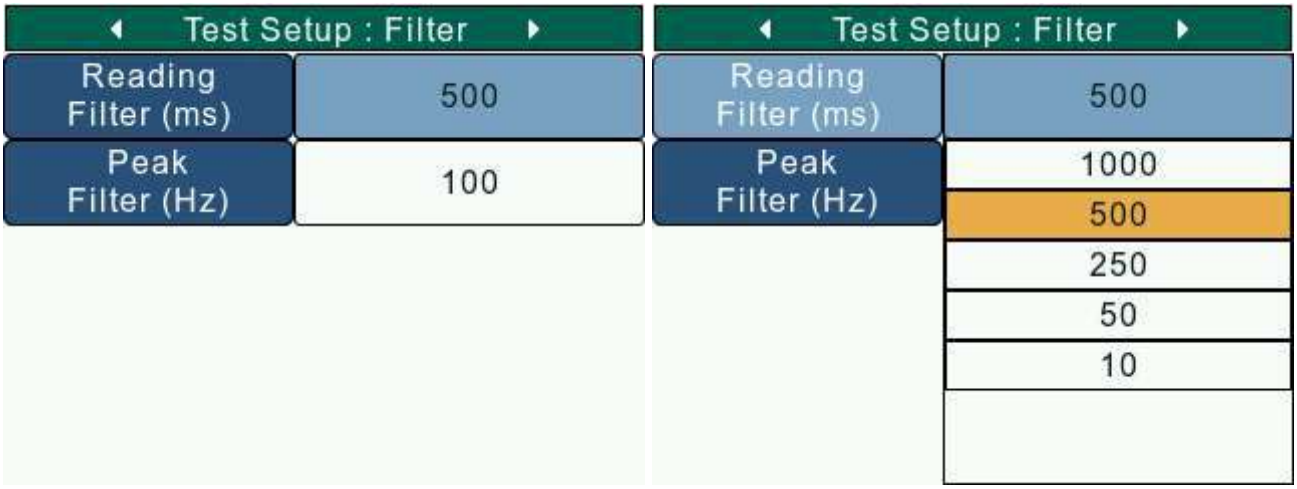
The Test Setup: Filter (TestSetupFilter.html) screen can be used to set the following parameters –

- Reading Filter
- Peak Filter

Reading Filter

The Reading Filter setting allows the user to set the averaging duration. The DF3 Series gauge use Simple Moving Average (SMA) algorithm to filter the readings. This setting determines the duration, in milli-seconds(ms), over which the samples are averaged. For e.g. if the Reading Filter value is set to 1000 ms, samples are collected for 1000 ms and avergaed.

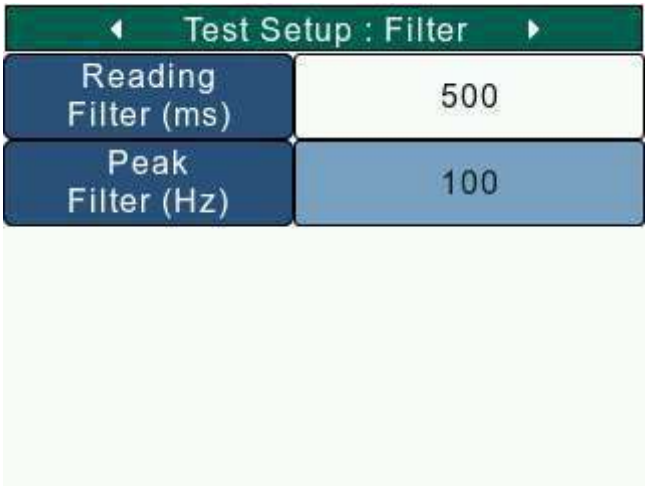
On the Test Setup: Filter (TestSetupFilter.html) screen, use the Navigation keys to set the cursor on the Reading Filter setting. To change the Reading Filter, press the Select key to open a list with available values. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Reading Filter setting to change.

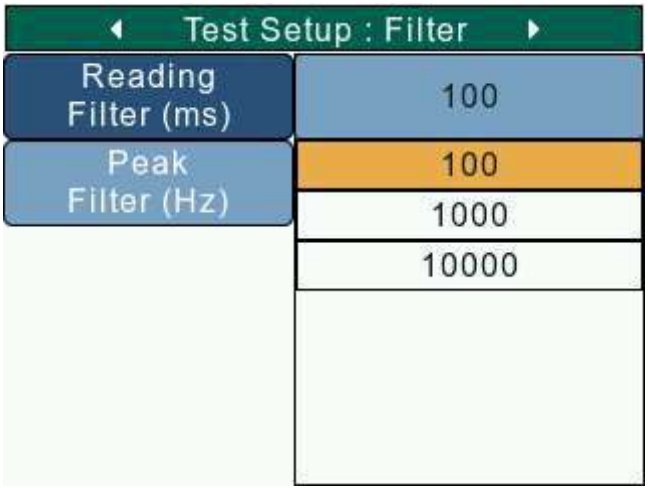


Peak Filter

The Peak Filter setting determines the frequency at which the peaks are calculated. For e.g. if the Reading Filter value is set to 1000 ms, samples are collected for 1000 ms and avergaed. For e.g. if the Peak Filter value is set to 1000 Hz, Peak will be checked 1000 times in a second.

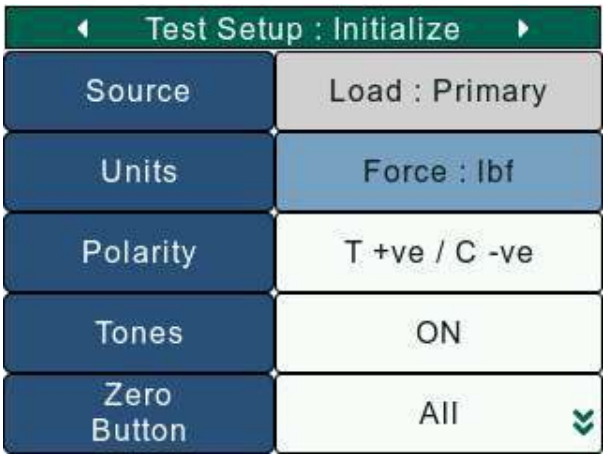
On the Test Setup: Filter (TestSetupFilter.html) screen, use the Navigation keys to set the cursor on the Peak Filter setting. To change the Peak Filter, press the Select key to open a list with available values. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Peak Filter setting to change.


Test Setup : Filter
Reading Filter (ms)
500
Peak Filter (Hz)
100


Test Setup : Filter
Reading Filter (ms)
100
Peak Filter (Hz)
100
1000
10000

Test Setup Initialize

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup screen. Use the Left/Right key to navigate to the Test Setup: Initialize (TestSetupInit.html) screen.



The Test Setup: Initialize (TestSetupInit.html) screen can be used to set the following test parameters:

- Source
- Units
    - Force Unit
- Polarity
- Tones
- Auto Zero
- Zero Button
- Resolution
    - Load Resolution

Source

The Source setting allows the user to change the Source Load and Source Extension. This setting is enabled only when Remote Modules are connected to the gauge. When no external modules are connected, the internal loadcell is set as the default Source Load.

Units

The DF3 gauge has a dedicated UNITS setting for changing units of measures. User can change the units of Force, Torque and Extension from the Test Setup: Initialize (TestSetupInit.html) screen.

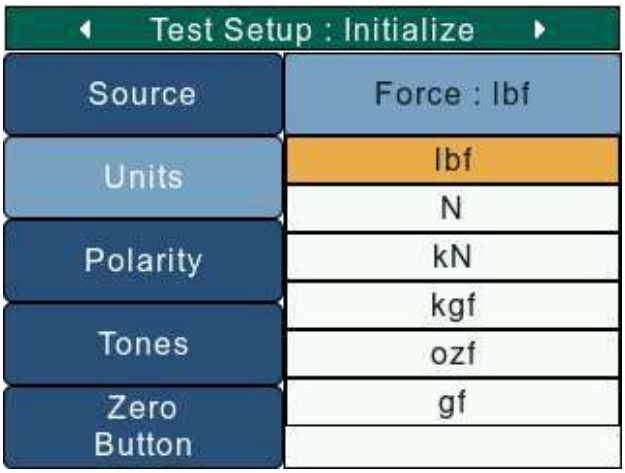
Force Unit

The DF3 gauge can display Force in the following units:

- ozf (Ounces Force)
- gf (Grams Force)
- lbf (Pounds Force)
- Kgf (Kilograms Force)

- N (Newtons)

On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation key to set the cursor on the Units setting and press the Select key to open Force option. To change the Force Unit, set cursor on Force and press the Select key to open a list with available Force Units. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the gauge Force Unit to change.

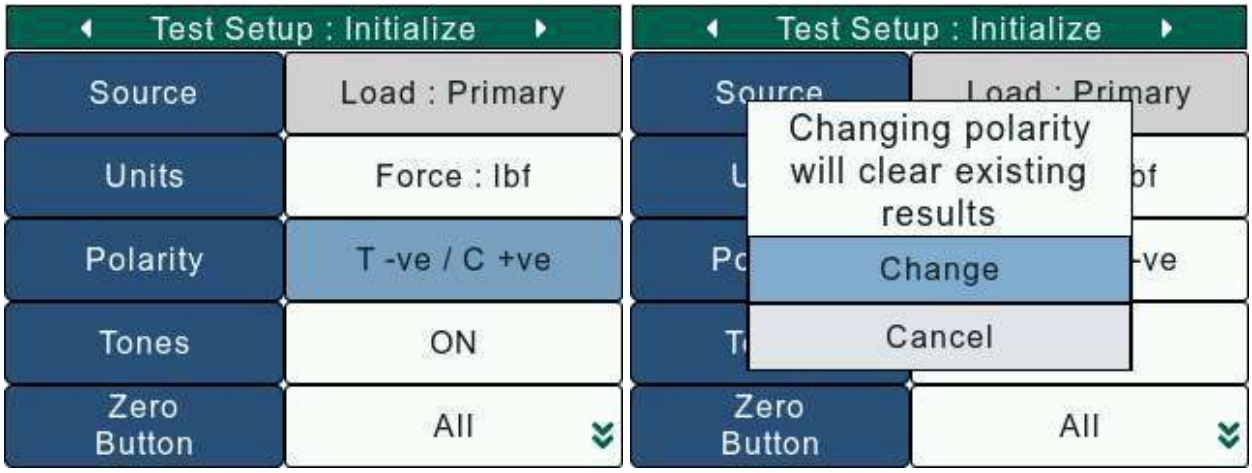


NOTE - Available units depends on the gauge model.

Polarity

The Polarity setting allows the user to change the Gauge Polarity.

On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation keys to set the cursor on the Polarity setting. To change the polarity, press the Select key to toggle the current polarity. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the polarity to change.



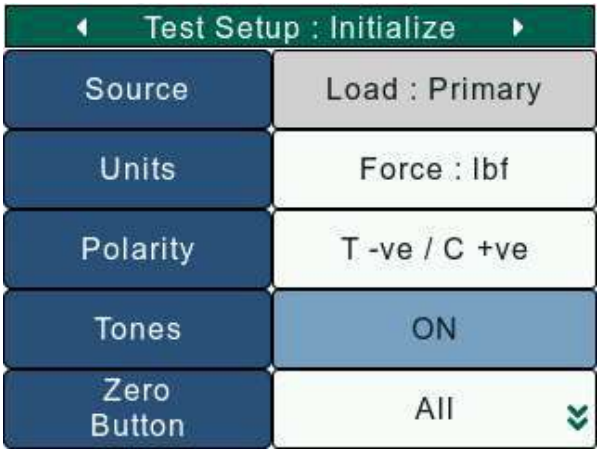
If the Polarity is T -ve / C +ve, Compression loads will be assigned a positive value and Tension loads will be assigned negative values.

If the Polarity is T +ve / C -ve, Compression loads will be assigned a negative value and Tension loads will be assigned positive values.

Tones

The DF3 gauge provides an audible alarm whenever a Load Limit has been reached .

On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation keys to set the cursor on the Tones setting. To change the buzzer state, press the Select key to toggle the current buzzer state. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the buzzer state to change.



If the Tones setting is ON, the buzzer will notify to the user a Load Limit is reached.

If the Tones setting is OFF, the user will not notified on a Load Limit is reached.

Auto Zero

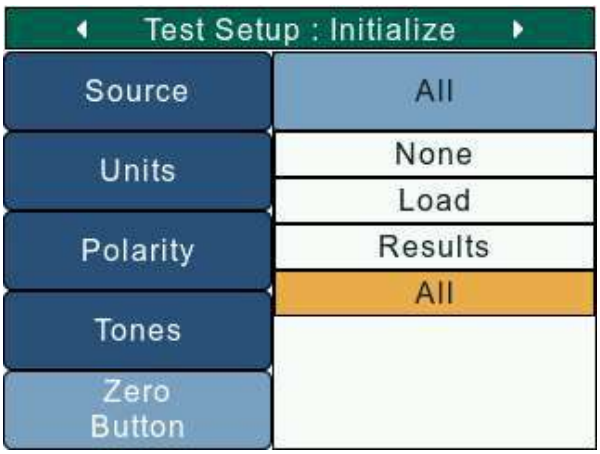
The Auto Zero feature will do all readings be zeroed when the user before test run presses the F1 key on the Home (HomeScreen.html) screen.

For the setting Auto Zero ON/OFF, On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation keys to set the cursor on the Auto Zero setting. To change the Auto Zero state, press the Select key to toggle the current Auto Zero state. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Auto Zero state to change.

Zero Button

The Default Zero setting allows the user to decide which reading should be zeroed when the user presses the Zero KEY on the Home (HomeScreen.html) screen.

On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation keys to set the cursor on the Default Zero setting. To change the Default Zero option, press the Select key to open a list with available Default Zero options. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Default Zero to change.



The DF3 Series allows the user to select one of the following readings as the Default Zero option:

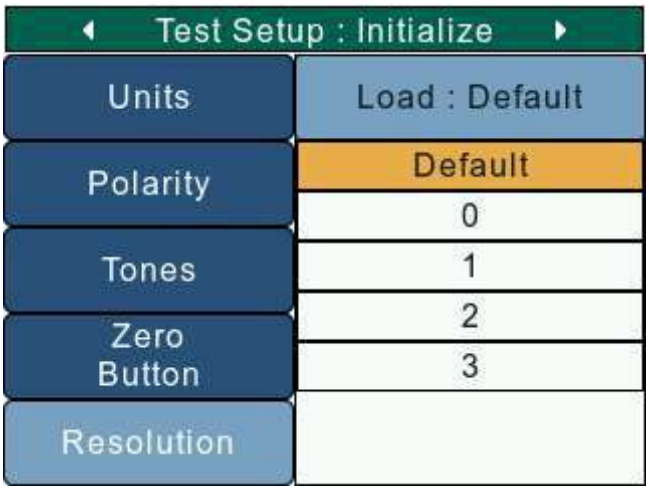
- Reading
- Extension
- Results
- All

Resolution

The Resolution setting allows the user to set decimal places in Force, Torque, and Extensions readings. The DF3 gague provides maximum resolution is 6 and minimum is 1. Also,The DF3 gauge has default resolution for their respective Units.

Load Resolution

On the Test Setup: Initialize (TestSetupInit.html) screen, use the Navigation key to set the cursor on the Resolution setting and press the Select key to open Load option. To change the Load resolution, set cursor on Load and press the Select key to open a list with available Resolution options. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the gauge Load Resolution to change.



The DF3 Series gauges supports reducing the default resolution to best fit the application.

NOTE - Available resolution options depend on the Gauge model and the current unit. The **DFS Series** supports an extra resolution point.

Test Setup Results

The Test Setup: Results (TestSetupResults.html) screen help the user configure result limits and save/export options.

From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup screen. Use the Left/Right key to navigate to the Test Setup: Results (TestSetupResults.html) screen.

The available options will depend on the results that have been enabled in Test Setup: Configure (TestSetupConfig.html) screen.

The Test Setup: Results screen can be used to set the following test parameters:

- Save
- Export

Save

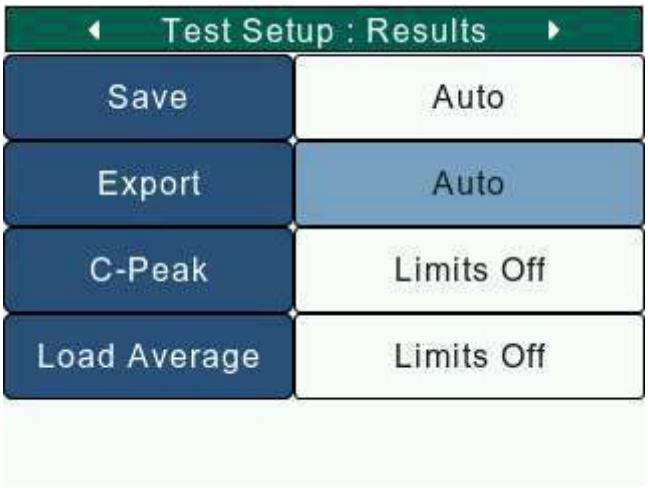
The Save setting allows the user to save the enabled Test Results (TestResults.html) into the memory after a test is completed. All the results that have been enabled in the Test Setup: Configure (TestSetupConfig.html) screen will be saved in the memory. The user can toggle the Save setting by clicking the Select key when the cursor is positioned on it.

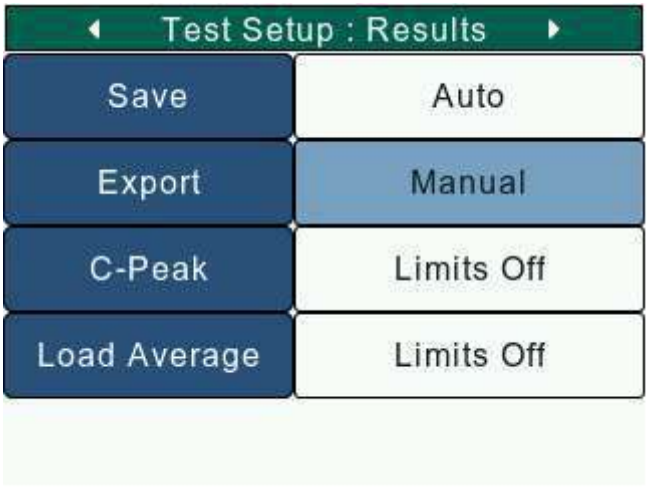
If the Save setting is Auto, the enabled results are stored automatically in the memory once a test is completed.

If the Save setting is Manual, the enabled results are can be stored in the memory from the Results (TestResults.html) screen.

Export

The Export setting allows the user to send the Test Results (TestResults.html) through the COM Port after a Test ends. All the results that have been enabled in the Test Setup: Configure (TestSetupConfig.html) screen will be exported. The user can toggle the Export setting by clicking the Select key when the cursor is positioned on it.

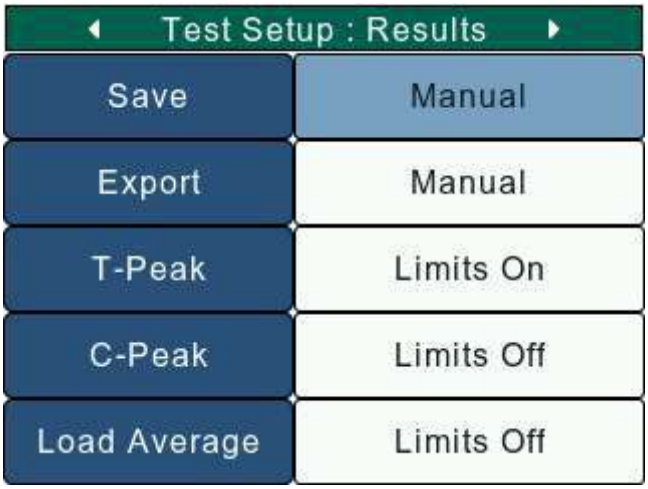


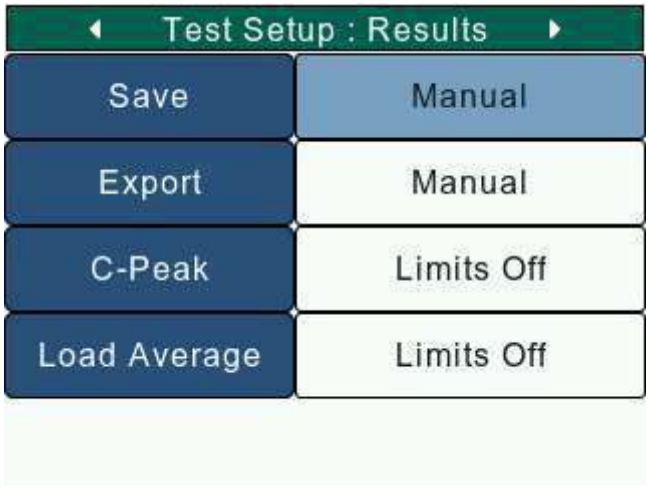


If the Export setting is Auto, the enabled results are automatically exported to the PC via the COM port once a test is completed. No data is exported if the gauge isn't connected to the PC.

If the Export setting is Manual, the enabled results are can be exported to the PC via the COM port from the Results (TestResults.html) screen.

The other settings available on this screen depend on the tests that have been enabled in the Test Setup: Configure (TestSetupConfig.html) screen. For each enabled setting, the user can set Pass/Fail limits (PassFailLimits.html).





For example, in the first image, T-Peak, C-Peak and Load Averaging have been enabled in the Test Setup: Configure (TestSetupConfig.html) screen whereas, in the second image, only C-Peak and Load Averaging have been enabled

To know more about pass/fail limits, refer to the Pass/Fail limits (PassFailLimits.html) page.

NOTE - If all settings have been disabled on the Test Setup: Configure (TestSetupConfig.html) screen, the Save and Export settings are disabled too, since there are no results to be saved or exported


Test Setup : Results
Save
Disabled
Export
Disabled

Test Setup: Start/Stop

The Test Setup: Start/Stop (TestSetupStartStop.html) screen lets to user setup the test Start and Stop conditions.

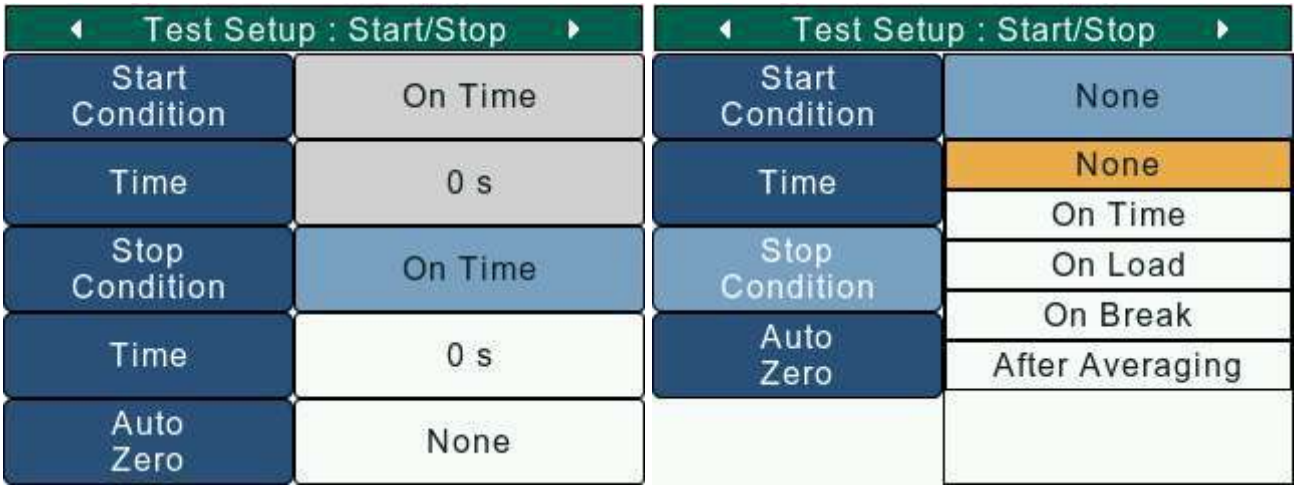
From the Home (HomeScreen.html) screen, press and hold the Settings key for 2 seconds to load the Configuration (ConfigurationScreen.html) screen. Navigate to the Test Setup option and press the Select key to load the Test Setup (TestSetupScreen.html) screen. Use the Left/Right key to navigate to the Test Setup: Start/Stop (TestSetupStartStop.html) screen.

The Test Setup: Start/Stop (TestSetupStartStop.html)screen can be used to set the following parameters –

- Stop Condition
- Auto Zero

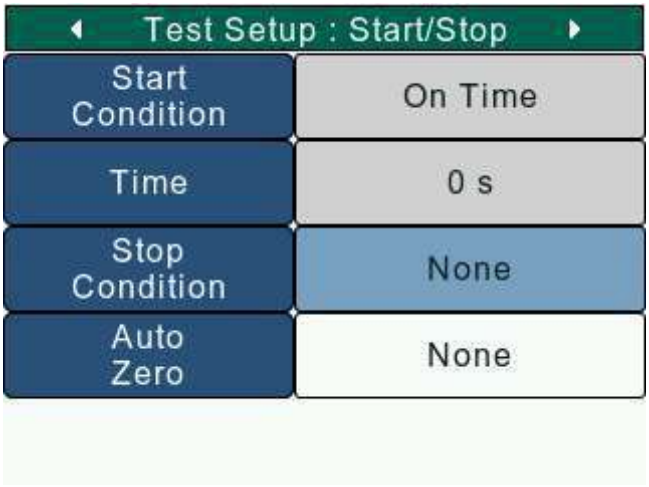
Stop Condition

The Stop condition setting lets the user select the condition that will trigger a test to stop. This condition is valid only when the test is started from the gauge i.e. by pressing the F1 Button on the Home (HomeScreen.html) screen. Irrespective of the Stop Condition, the test can be stopped from the Home (HomeScreen.html) screen by pressing the F1 button.



On the Test Setup: Start/Stop (TestSetupStartStop.html) screen, use the Navigation keys to set the cursor on the Stop condition setting. To change the Stop condition, press the Select key to open a list with available stop conditions. The available stop conditions will depend on the results that have been enabled in Test Setup: Configure (TestSetupConfig.html) screen.

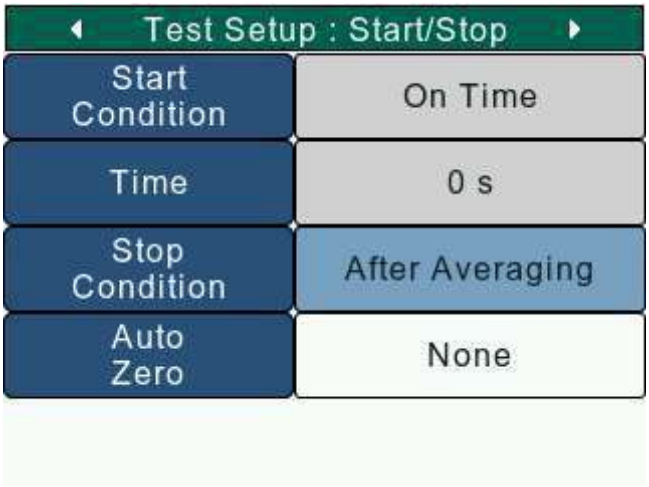
If the Stop condition is set to 'None', the test will stop only when the user manually presses the F1 Button on the Home (HomeScreen.html) screen.



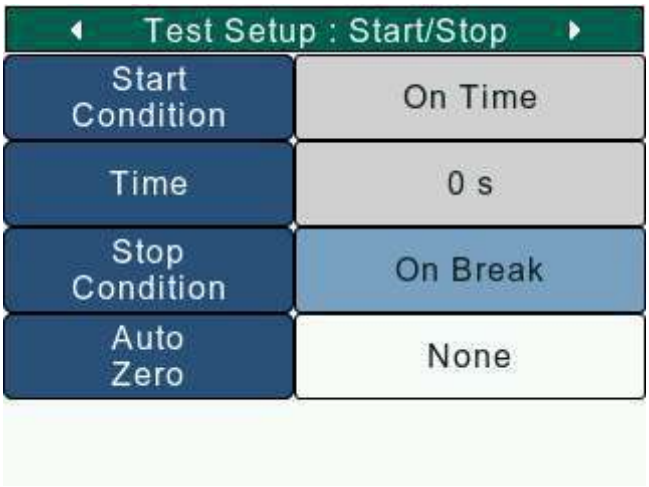
If the Stop condition is set to 'On Time', the user gets to set the test duration. The stop timer is visible on the Home (HomeScreen.html) screen indicating the time left in seconds. The user can enter a value between 0 - 3600 s as the stop duration.

If the Stop condition is set to 'On Load', the user gets to set a load value, upon reaching which the test stops. The load value set by the user must be less than the maximum gauge capacity.

Stop Condition 'After Averaging' is available only if Load Averaging is enabled in Test Setup: Configure (TestSetupConfig.html) screen. In this case, the test stops once load averaging is completed.



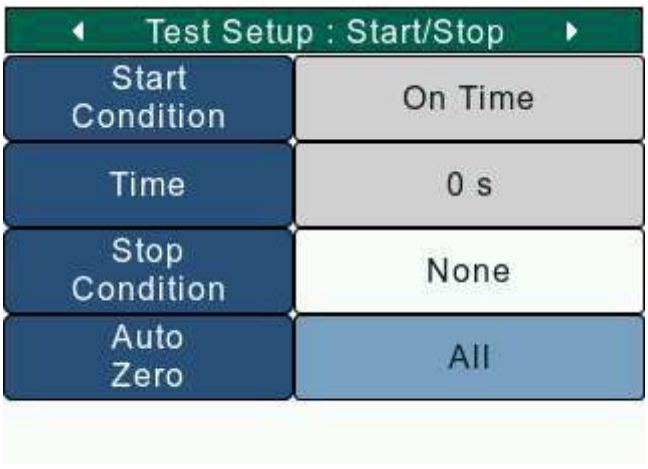
Stop Condition 'On Break' is available only if Break Detection is enabled in Test Setup: Configure (TestSetupConfig.html) screen. This option is available only in the DFS Series gauges. In this case, the test stops once break is detected.

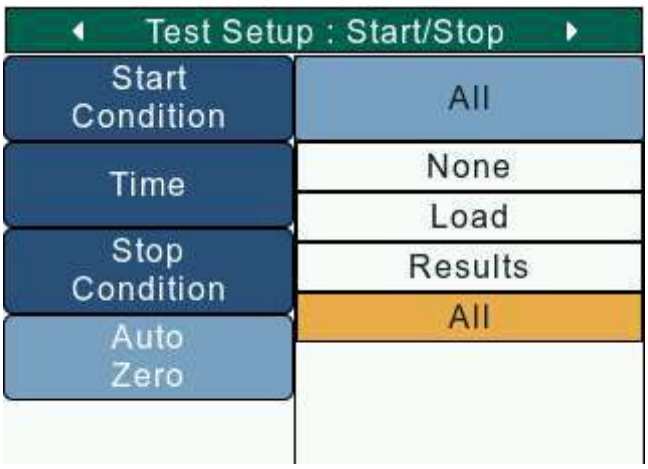


The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Stop Condition to change.

Auto Zero

The Auto Zero setting automatically zeroes the selected values when a test is started. Once this is set, the user won't have to manual zero the values before starting the test. Auto Zero can be disabled by selecting the 'None' option. Selecting the 'All' option Zeros Reasults as well as Load reading.





On the Test Setup: Start/Stop (TestSetupStartStop.html) screen, use the Navigation keys to set the cursor on the Lock Home setting. To change the Auto Zero setting, press the Select key to open a list with available options. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Auto Zero setting to change.

Home Screen


Status Bar
Source Indicator
Result Counter
TCM
76 %
LOAD
NORM
#5
Start/Stop Time Indicator
: 1
-48.300 :T-PK
-48.300
lbf
Sub-readings (Result Dependent)
40.300 :C-PK
Warning Message
Over Limit
95%
Result Selection
Pass/Fail Status
LOAD
LAVG
#5
: 1
27.9000 :Norm
Main Source Reading or Result Value (Result Dependent)
22.5082
lbf
Unit Selection
0 :Time
Over Limit
Load Bar Indicator
55%
Timeout Counter (Load Averaging)
Function Icons (F1 – F4)

Information Screen

The Information screen gives the user the general information and current status of the gauge.

From the Home (HomeScreen.html) screen, press the Settings key once to load the Information (StatusScreen.html) screen.

The Information (StatusScreen.html) screen consists of 4 sub-screens. Each sub-screen focuses on a specific aspect of the gauge –

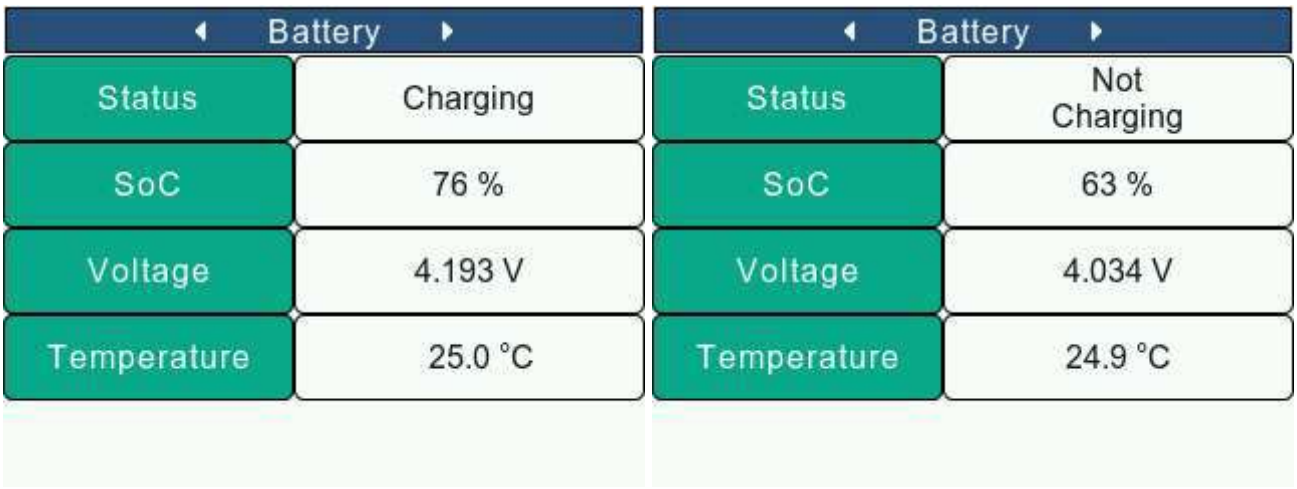
- Gauge (GaugeInfo.html)
- Overloads (OverloadInfo.html)
- Calibration (CalibrationInfo.html)
- Battery (BatteryInfo.html)

The user can use Left/Right navigation keys to switch between these sub-screens.

Battery Information

From the Home (HomeScreen.html) screen, press the Settings key once to load the Informations (StatusScreen.html) screen. Navigate to the 'Battery' option and press the Select key to load the Battery (BatteryInfo.html) screen. User will see the following parameters:

- Status
- State Of Charge (SoC)
- Voltage
- Temperature



Status

The 'Status' parameter indicates the current battery status. The user can charge the gauge by plugging the USB cable into any suitable USB port or charger. The gauge will also charge when connected to a TCM test stand.

State of Charge (SoC)

The State of charge (SoC) parameter displays the current battery charge as a percentage.

Voltage

The Voltage parameter displays the Output Voltage of the battery.

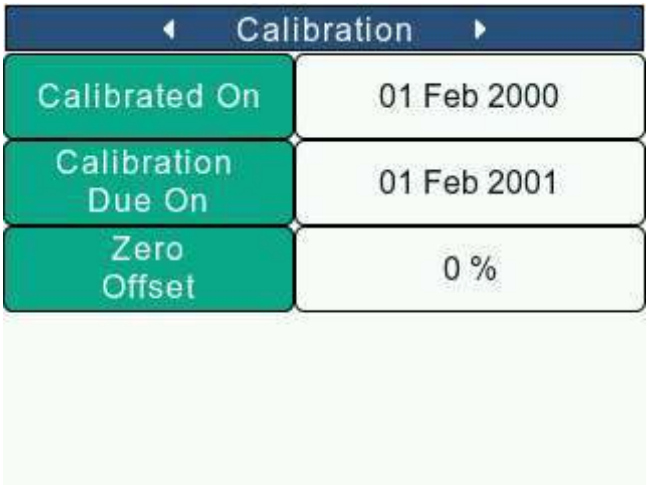
Temperature

The Temperature parameter displays the battery temperature measured internally. The battery can only be charged in the temperature range of 10 to 45°C. If the gauge is outside of this range, charging will automatically be disabled. Charging will resume when the temperature returns within the permittable range.

Calibration Info

From the Home (HomeScreen.html) screen, press the Settings key once to load the Informations (StatusScreen.html) screen. Navigate to the Calibration option and press the Select key to load the Calibration (CalibrationInfo.html) screen. User will see the following parametrs:

- Calibrated On
- Calibration Due On
- Zero Offset



Calibrated On

The Calibrated On parameter lets the user know the last Calibration date.

Calibration Due On

The Calibration Due On parameter tells the user the next date when the gauge needs to be re-calibrated.

Zero Offset

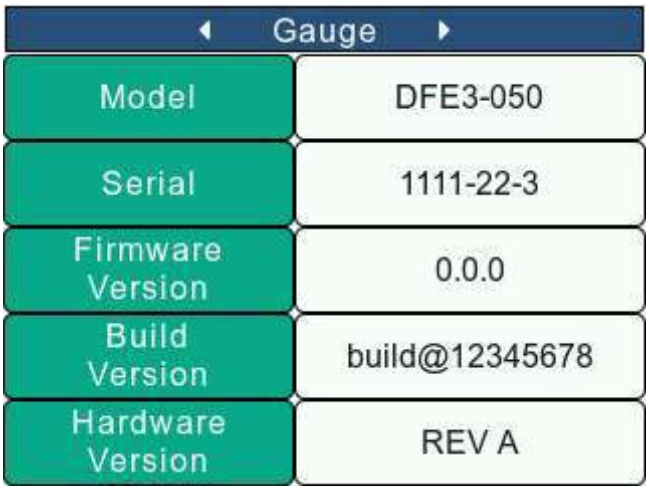
The Zero Offset parameter indicates the percentage by which the Normal reading differs from the absolute load applied to the gauge.

Gauge Information

The Gauge Information screen shows the Gauge related information.

From the Home (HomeScreen.html) screen, press the Settings key once to load the Information (StatusScreen.html) screen. Navigate to the Gauge option and press the Select key to load the Gauge Information (GaugeInfo.html) screen. User will see the following Gauge Information parameters:

- Model
- Serial Number
- Firmware Version
- Build Version
- Hardware Version



Model

Displays the Gauge Model

Serial Number

Displays the Gauge Serial No.

Firmware Version

Shows the current Firmware version

Build Version

Shows the current Build version

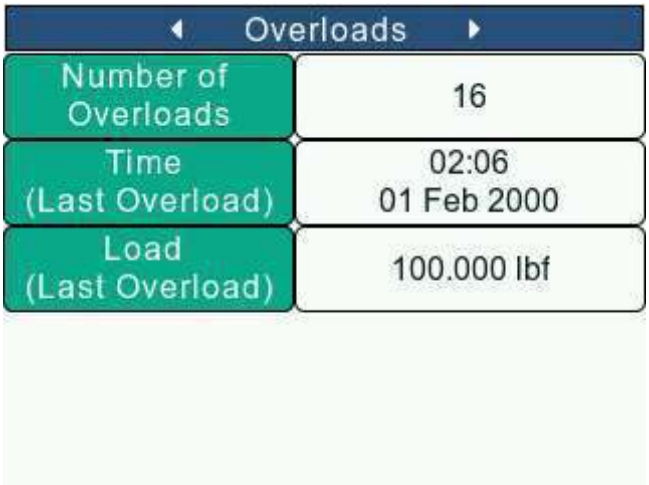
Hardware Version

Shows the current Hardware version

Overload Info

From the Home (HomeScreen.html) screen, press the Settings key once to load the Information (StatusScreen.html) screen. Navigate to the Overload option and press the Select key to load the Overload (OverloadInfo.html) screen. User will see the following parameters:

- Number of Overloads
- Time (Last Overload)
- Load (Last Overload)



Number of Overloads

The Number of Overloads parameter lets the user know the number of time the gauge has been overloaded. The DF3 Series gauges keep track of the last 25 overloads.

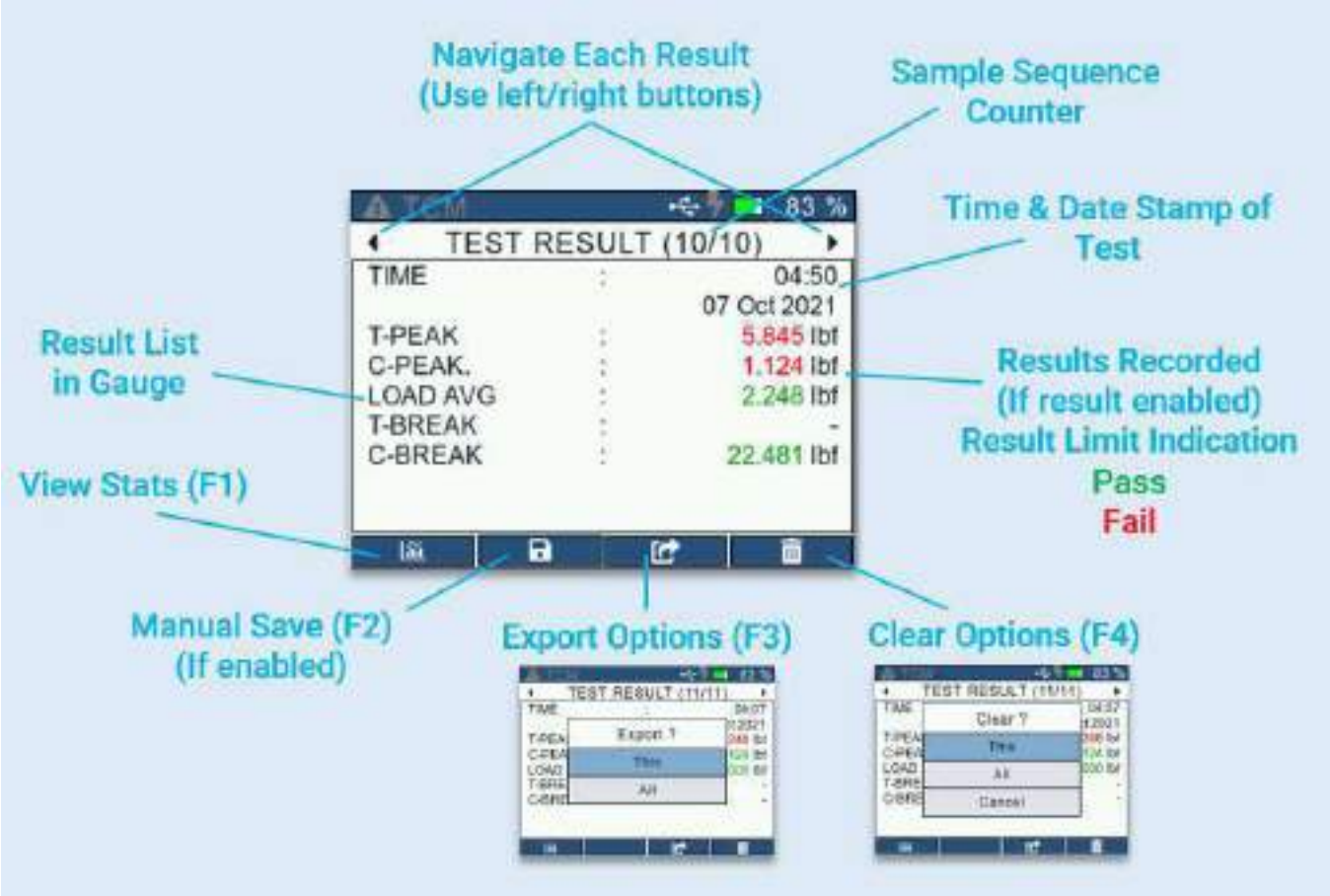
Time (Last Overload)

The Time (Last Overload) parameter tells the user the date and time of the last recorded overload.

Load (Last Overload)

The Load (Last Overload) parameter tells the user the load value of the last recorded overload.

Test Results



Saving Results

The DF3 Series gauges give the user an option to select whether to save the test results automatically at the end of a test run or to save manually from Results (TestResults.html) screen. This setting can be configured by setting the Save parameter to Auto/Manual from the Test Setup : Results (TestSetupResults.html) screen.

When manual saving is selected, the user must navigate to the Test Results screen and press the F2 button to save the current result.

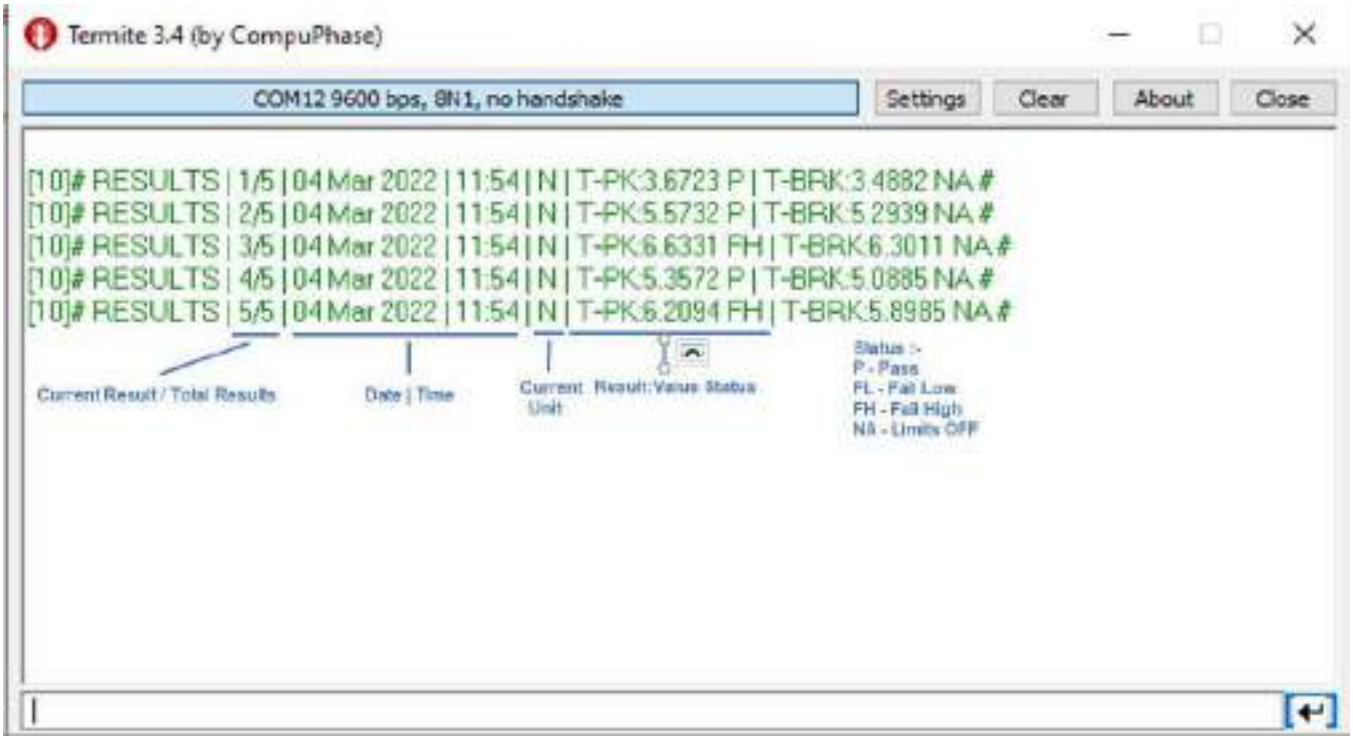
Note : This option is available only when the Save parameter in the Test Setup : Results (TestSetupResults.html) screen is set to manual.

Exporting Results

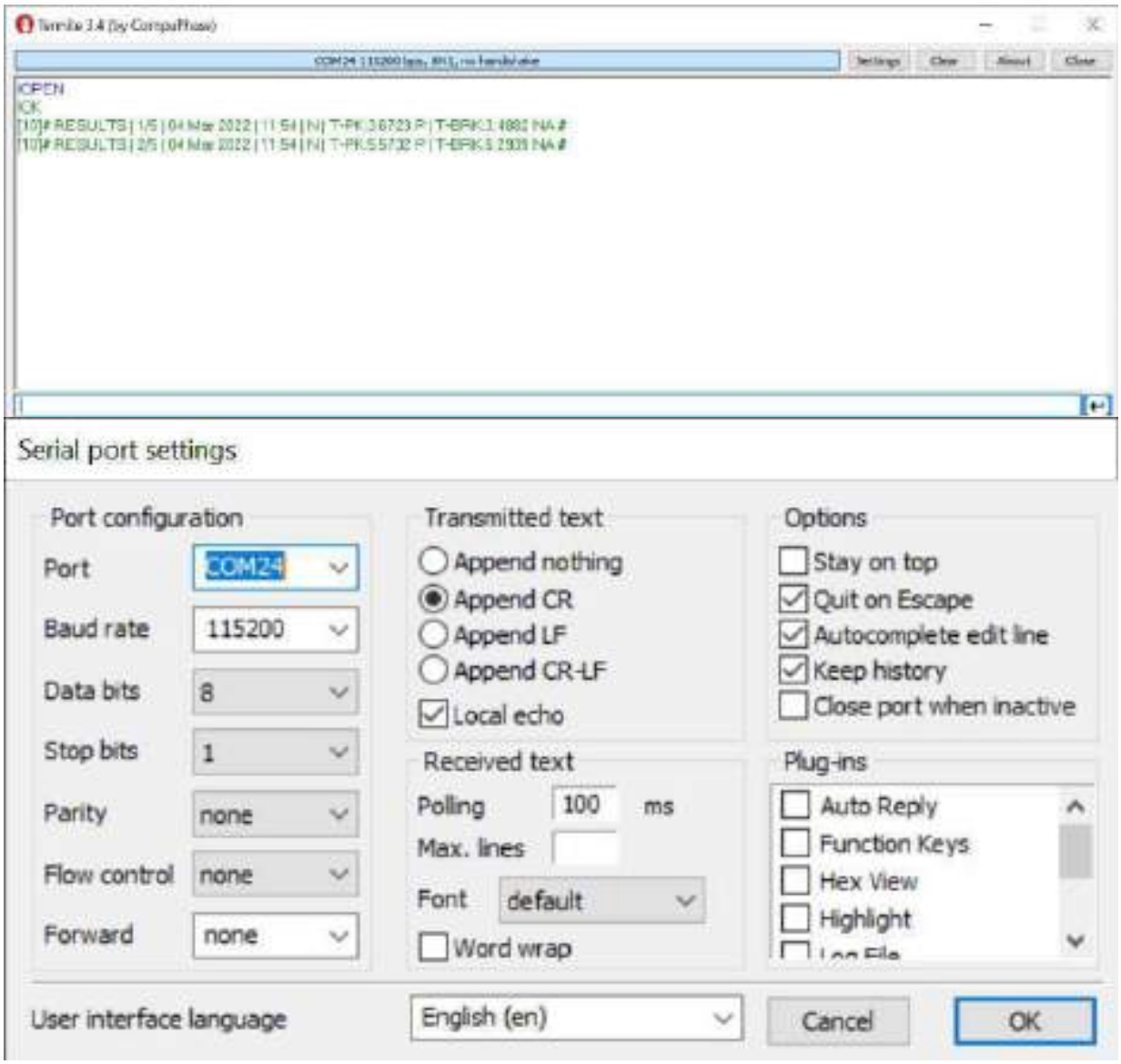
The DF3 Series gauges give the user an option to select whether to export the test results automatically at the end of a test run or to export manually from Results (TestResults.html) screen. This setting can be configured by setting the Export parameter to Auto/Manual from the Test Setup : Results (TestSetupResults.html) screen.

The results get exported only when the gauge to connected to a Serial Terminal like Termite. When not connected, the gauge will throw a "Not connected !" pop-up on the display.

When manual export is selected, the user must navigate to the Test Results screen and press the F3 button to save the results. The user can decide whether to export the current result or all results in memory.

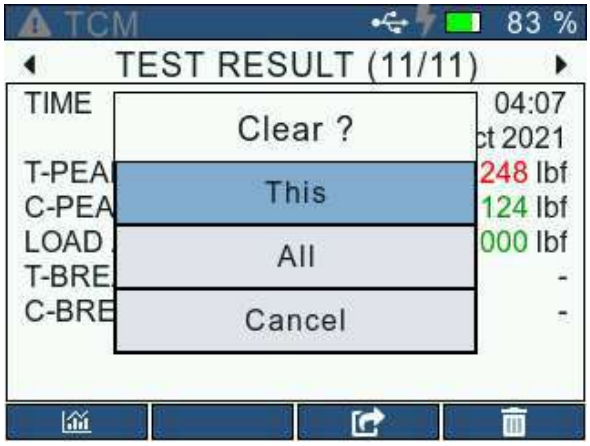


Before the exporting the results, the user must make sure that communication has been established with the serial terminal. To do this, the user must connect the gauge to the PC through USB and make sure no other application, such as ForceTest, DeviceAgent, is communicating with the gauge. Once this is confirmed, the user must send **!OPEN** command from the terminal and wait for the gauge to respond with **!OK**. If **!OK** is received, the user can go ahead and export results/statistics.

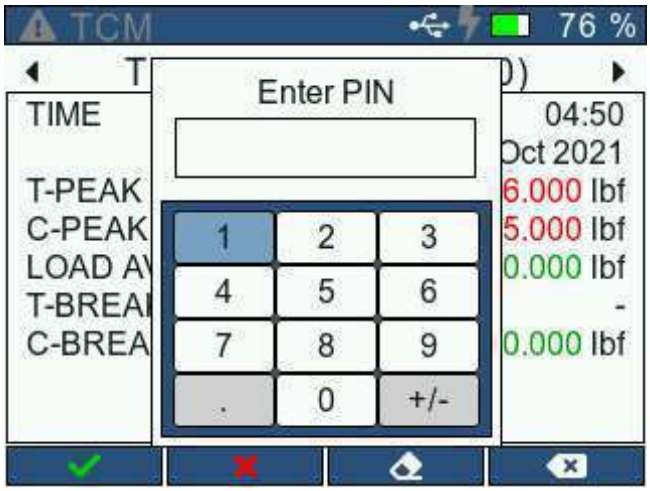


The gauge doesn't respond if there's an issue with communication. This could be because the gauge is being used by another application or the command sent is incorrect. Another reason could be a disparity in setting.

Clearing Results

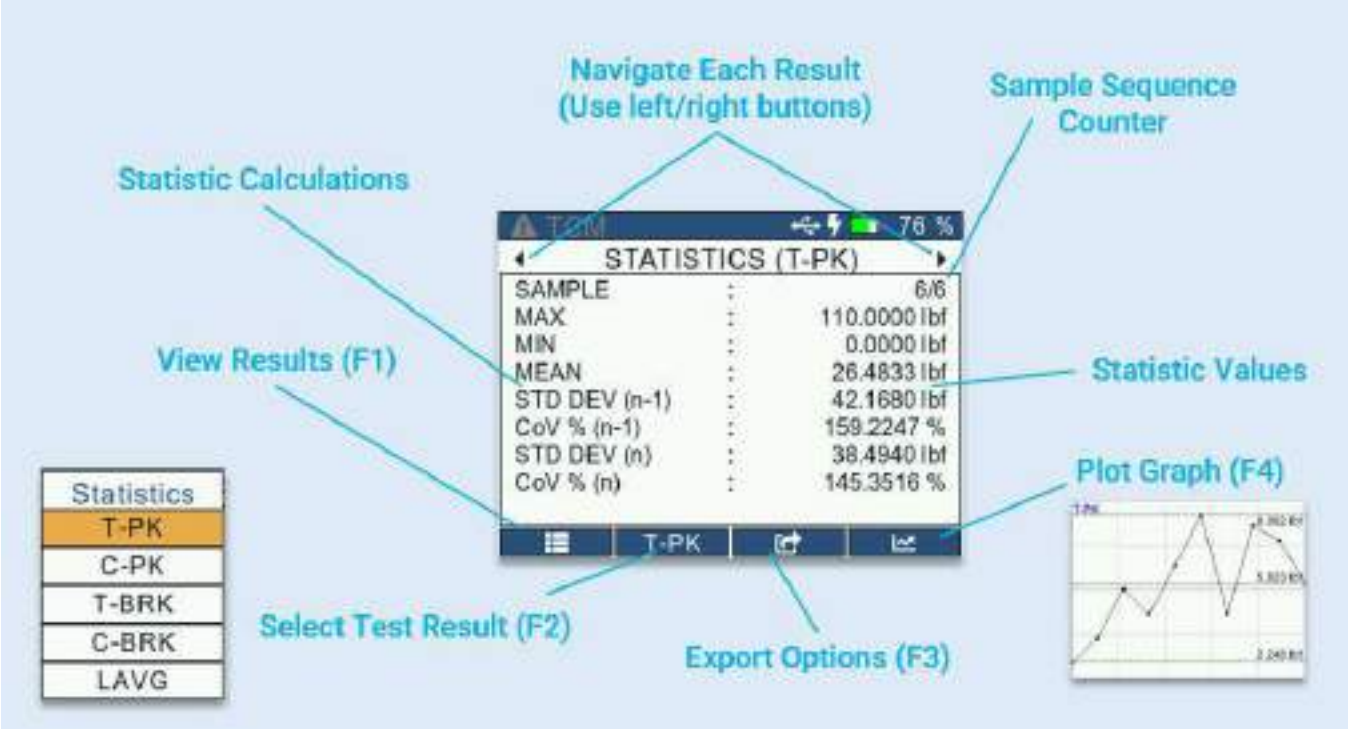


The user can clear the current or all results from the Results (TestResults.html) by pressing the F4 button. A pop-up shows up, letting the user decide whether to clear the current result or all results.

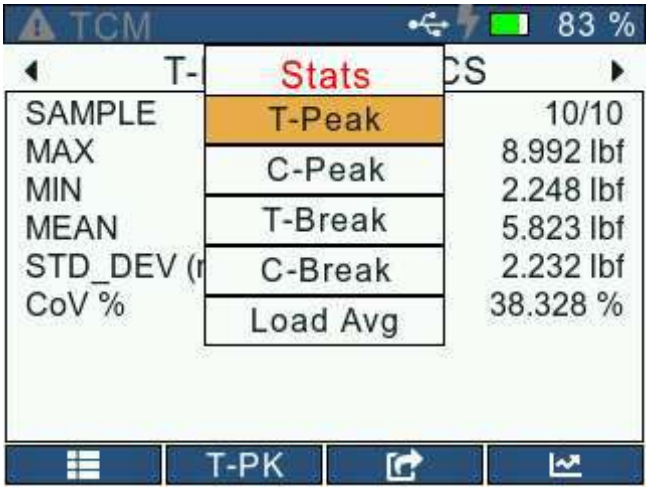


If the Password is enabled from the Accounts (./AccountsScreen), the user will have to enter the PIN before clearing the results.

Test Statistics



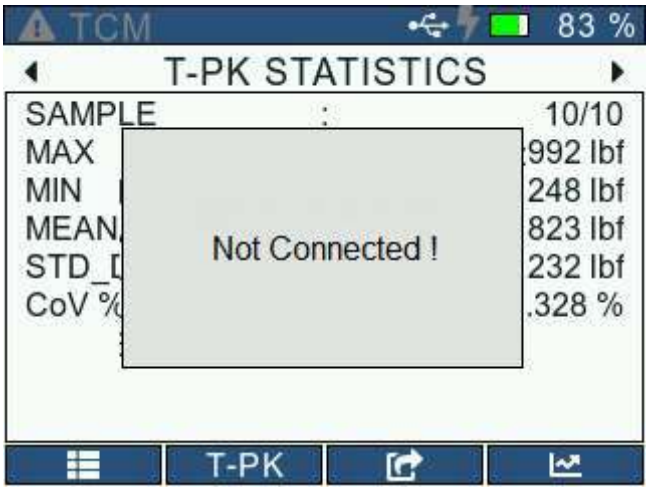
Switch between Result Statistics



The F1 button can be pressed to get a list of available statistics and switch to the statistic to be viewed. The user can also switch between statistics using the Left/Right buttons.

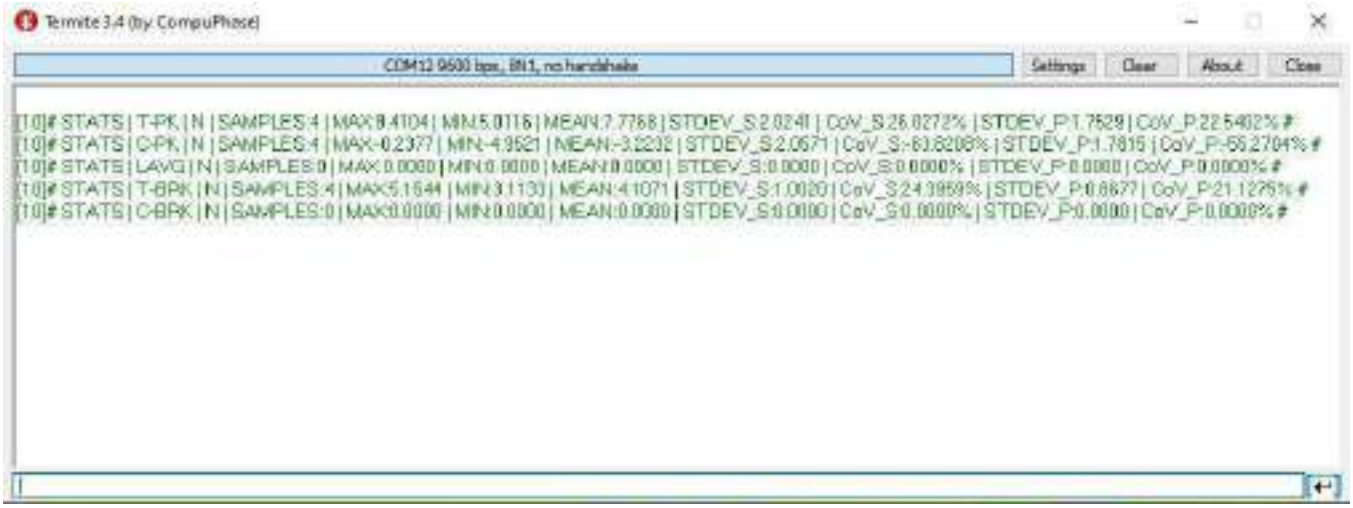
Exporting Statistics

The DF3 Series gauges give the user an option to export the test statistics manually from Statistics (TestStatistics.html) screen.

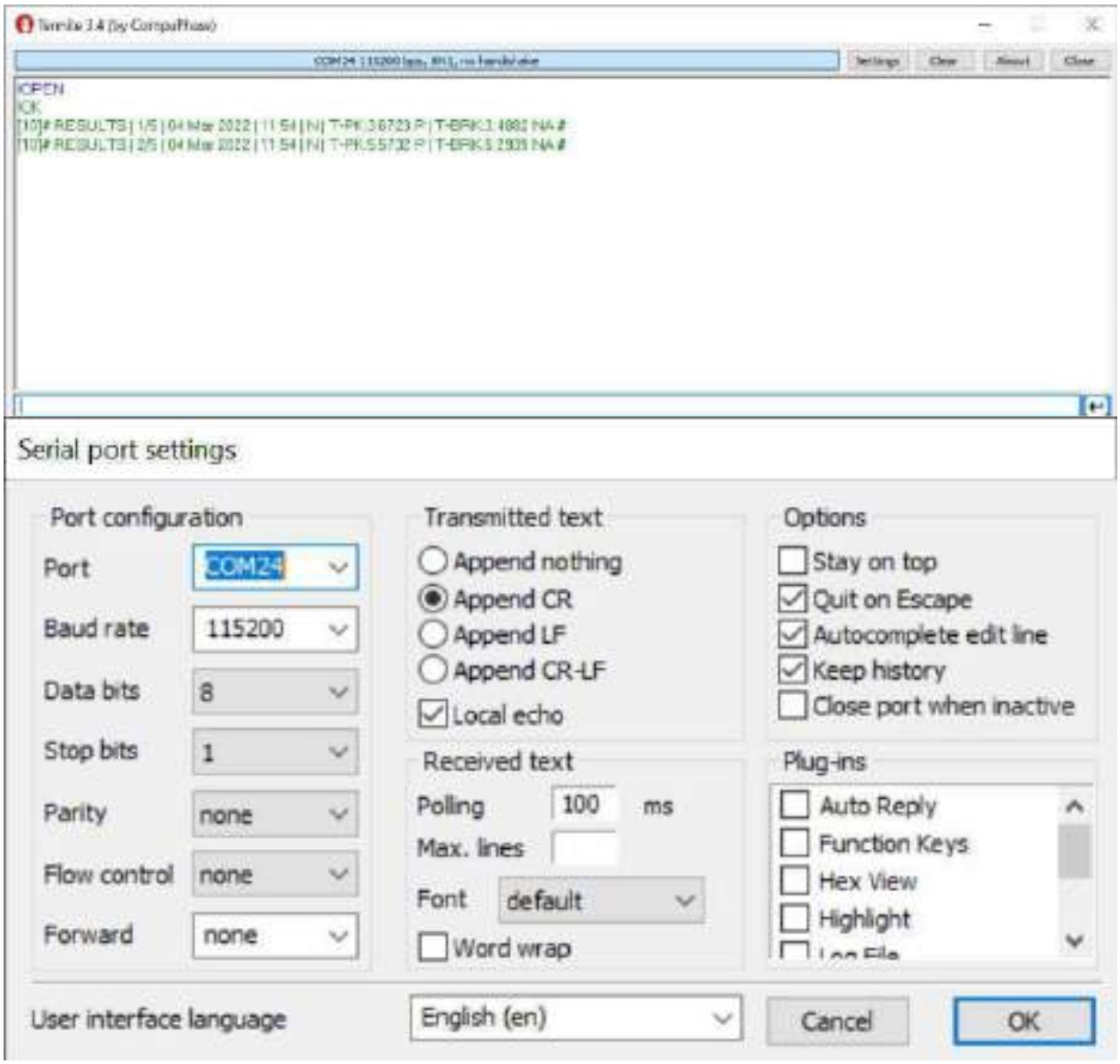


The Statistics get exported only when the gauge to connected to a Serial Terminal like Termite. When not connected, the gauge will throw a "Not connected !" pop-up on the display.

The user can decide whether to export the current statistic or all statistics.



Before the exporting the statistics, the user must make sure that communication has been established with the serial terminal. To do this, the user must connect the gauge to the PC through USB and make sure no other application, such as ForceTest, DeviceAgent, is communicating with the gauge at the same time. Once this is confirmed, the user must send **!OPEN** command from the terminal and wait for the gauge to respond with **!OK**. If **!OK** is received, the user can go ahead and export results/statistics.



The gauge doesn't respond if there's an issue with communication. This could be because the gauge is being used by another application or the command sent is incorrect. Another reason could be a disparity in setting.

Plotting Graph

The F4 button can be pressed by the user to get a plot for the current result. The DF3 Series gauge allows the user to plot upto 300 data points and also displays Max, Min and Mean plotlines. If limits are on for the result selected, the user will also be able to see the high and low limits set by the user.

Break Detection

(Available only in the DFS3 Series gauges)

Break detection has two distinct uses:

1. As a Test Stop condition
When a test is running with the stop condition set to 'On Break', it will stop that test if the conditions defined in Break Detection settings have been met.

2. As a Test Result for Breaking Force (T-BRK or C-BRK)
This function is especially useful with samples that characteristically yield before they actually break.

The DF3 Series gauge will report the following as part of a Break Detect test:

- Break Load
- Peak Load (T-PK or C-PK)

The DF3 force gauge allows you to perform two different methods:

- Sharp Break
- Percentage Break

It is important to note that the DF3 gauge will need to be zeroed in between each test that uses break detection for the break detection to be applied to the next test.

Sharp Break

The Sharp Break method is used for detecting very quick and large changes in force readings. The internal algorithm checks for a number of load changes within defined periods of time. This is normally reserved for a fast acting break in a sample under test.

Percentage Break

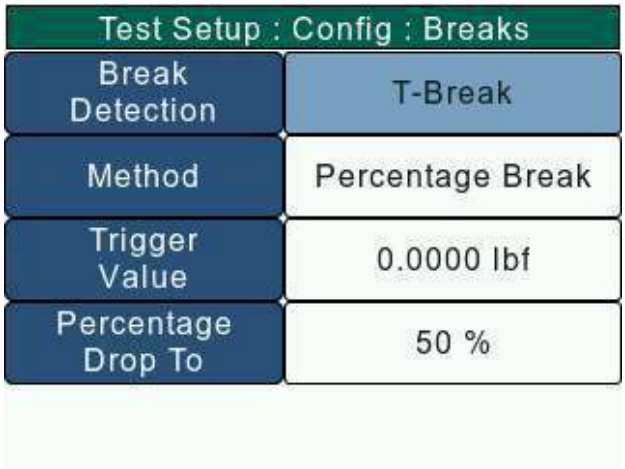
The Percentage Break method is ideal for tests where the drop in force is gradual, due to slower failure under load. The Percentage Break test allows the user to specify a % Drop from the Peak Load.

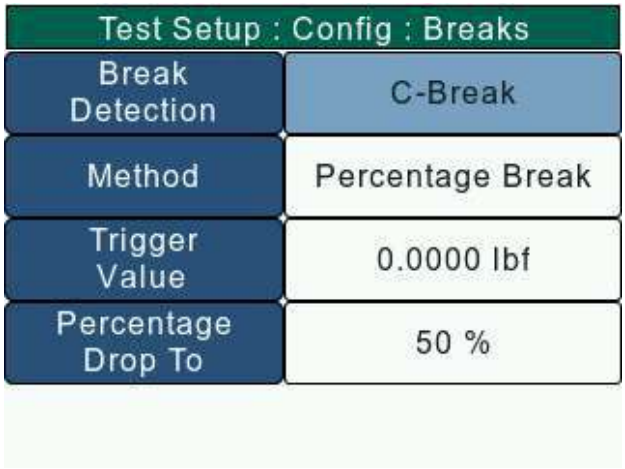
Example: Set the Percentage Drop to 80%: The DF3 gauge will determine the Break Load when the current load measured reaches 80% of the last recorded Peak Load value.

Break Detection Setup

For performing a Break Detection test, the user must enable the Break Detection from the Test Setup: Configure (TestSetupConfig.html) screen. The Break Detection (BreakDetection.html) screen allows the user to configure the following settings:

- Enable/Select Mode
- Method
- Trigger Point
- Percentage Drop



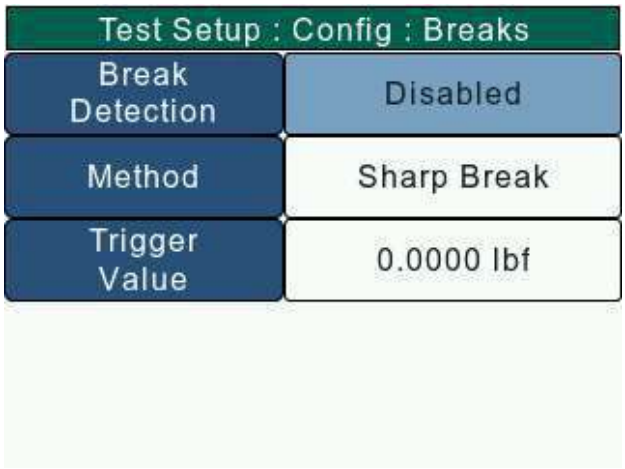


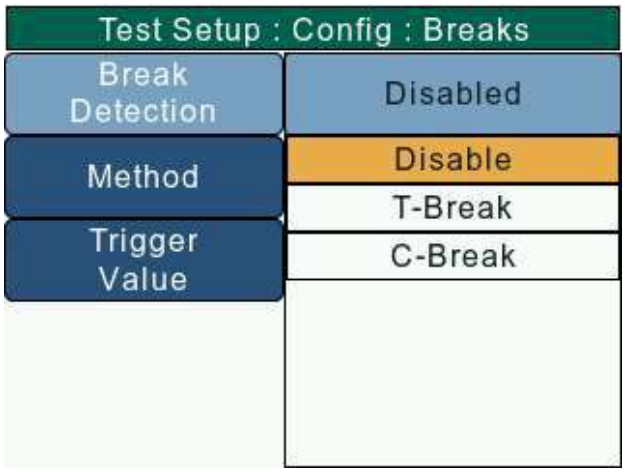
Enable/Select Mode

From the Test Setup: Config: Break Detection (BreakDetection.html) screen, use the navigation keys to set the cursor on the 'Break Detection' option. Press the select key to toggle between 3 options shown below. Break Detection is 'Disabled' or 'Enabled' automatically by selecting either 'T-Break' or 'C-Break'. This will define which gauge mode (Tension or Compression), that the break detection will become active over.

The Break Detection menu will offer:

- Disable
- T-Break
- C-Break

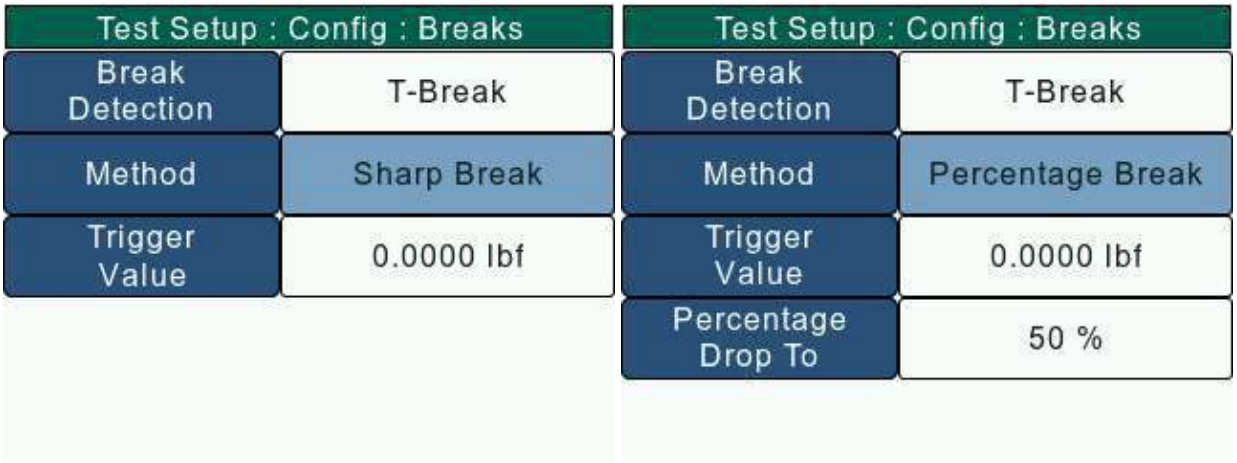




The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the break detection settings to be applied.

Method

On the Test Setup: Config: Break Detection (BreakDetection.html) screen, use the Navigation keys to set the cursor on the 'Method' option. To change the Break Detect method, press the Select key to toggle between 'Sharp Break' and 'Percentage Break'.



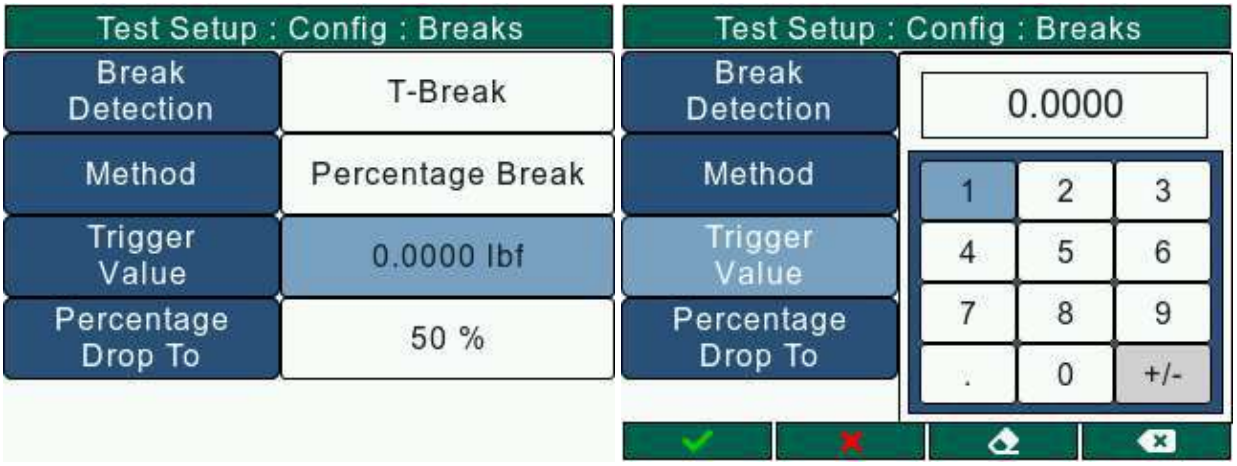
The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the break detection settings to be applied.

Trigger Point

The 'Trigger Point' defines the minimum force value at which the break detection function becomes active. It is important to set a correct “Break Point” based on the type of specimen and it's expected break characteristics.

If the break point is set too high, the gauge may not detect a break condition and the test being performed may not stop automatically, if the Stop condition is set for break.

On the Test Setup: Config: Break Detection (BreakDetection.html) screen, use the Navigation Keys to set the cursor on the 'Trigger Point' option. Press the Select key to open the numeric keypad (NumericKeypad.html). Enter the required trigger force value.

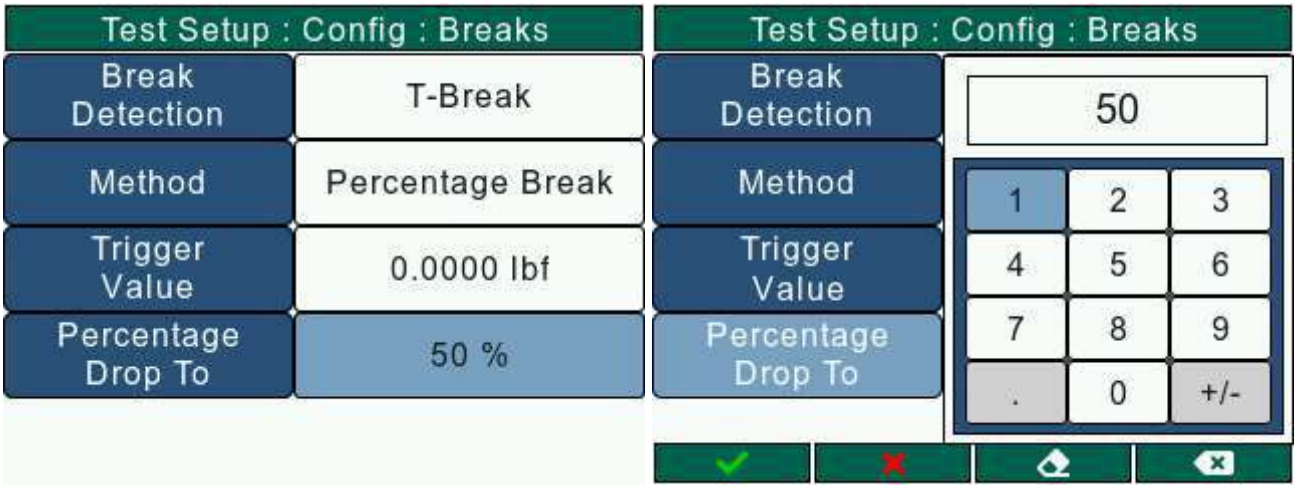


The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the trigger point setting to be applied.

Percentage Drop

The 'Percentage Drop to' value defines the percentage of the stored peak load value that the live reading must reach, for the DF3 gauge to activate the break detection. If the user defines the 'On Break' stop condition, this will automatically stop the gauge test currently running. The Percentage Break is a user-defined percentage drop. You may specify the % Drop to be from 1% to 99%, using the numeric keypad (NumericKeypad.html).

On the Test Setup: Config: Break Detection (BreakDetection.html) screen, use the Navigation Keys to set the cursor on the Percentage Drop. To set the Percentage Drop, press the Select key to open the numeric keypad (NumericKeypad.html).



The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the percentage drop setting to be applied.

Load Averaging

The DF3 Series force gauge allows you to perform two different types of Load Averaging tests:

- Force Based
- Time Based

Force Based

This load averaging test allows you to set a pre-load limit value or load threshold. The Preload value represents the "Start" and "End" point for your averaging function. The gauge will begin to collect and average the measured values once the "Preload Value" has been reached. The gauge will continue to average until the measured load drops below the Preload value. When the test is completed, the gauge will display the "Average Load".

Time Based

This load averaging test works identical to the Force-Based method except it adds "Time" as a factor. You may set the Timeout Value from 1 second to 3600 seconds. The gauge will begin to collect and average the measured values once the "Preload Value" has been sensed. The gauge will continue to average until the measured load drops below the preload value OR until the specified time has elapsed. When the test is completed, the gauge will display the "Average Load".

Load Averaging Setup

To setup the Load Averaging function, the user must enable the Load Averaging from the Test Setup: Configure (TestSetupConfig.html) screen. The Load Averaging (LoadAveraging.html) screen allows the user to configure following settings:

- Enable
- Preload Value
- Timeout

Enable

On the Test Setup: Config: Load Averaging (LoadAveraging.html) screen, use the Navigation key to set the cursor on the Load Averaging. To change the Load Averaging state, press the select key to toggle between enabled and disabled. The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Load Averaging to enabled or disabled.

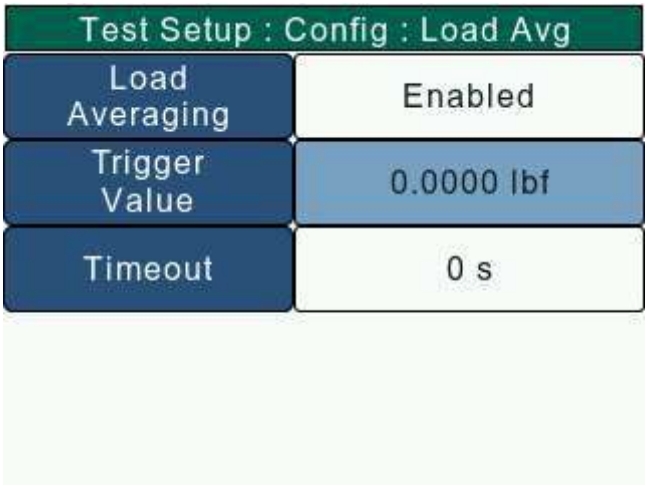
When enabled, the user will be able to perform the Load Averaging test.

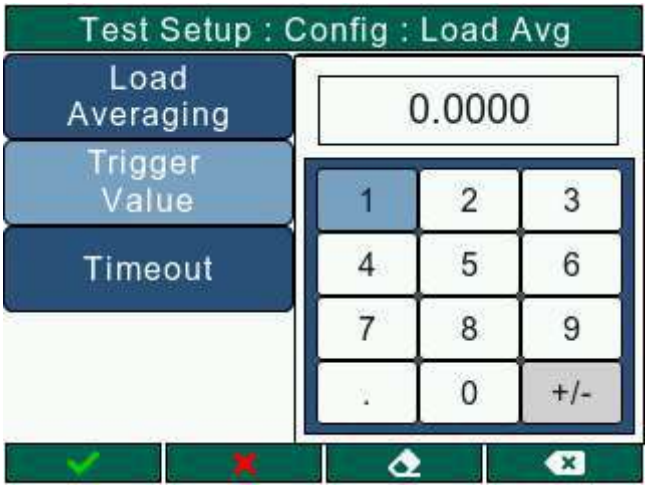
When disabled, the Load Averaging test will not run.

Preload Value

The 'Preload Value' defines the minimum force value at which the Load Averaging function becomes active. The Preload Value also acts as the termination point of the test. Once the test has started, if the applied load drops below the Preload Value, the test is terminated. If the DF3 is connected to a TCM data collection is terminated but, the test continues.

On the Test Setup: Config: Load Averaging (LoadAveraging.html) screen, use the Navigation Keys to set the cursor on the 'Preload Value' option. Press the Select key to open the numeric keypad (NumericKeypad.html). Enter the required Preload Value value.



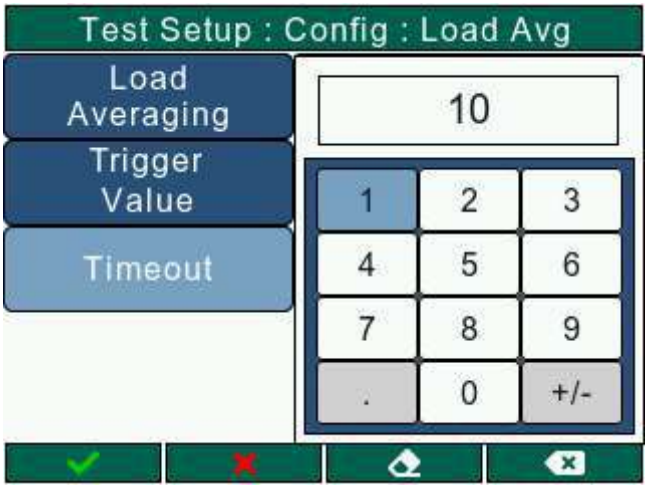


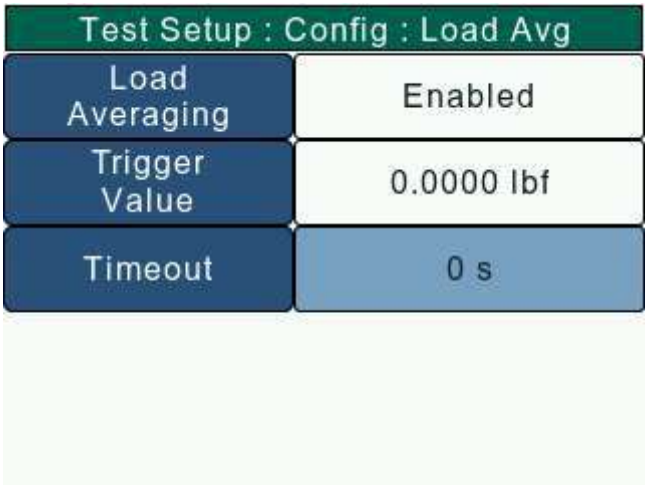
The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Preload value setting to be applied.

Timeout

Once the Load Averaging function is active, the 'Timeout' defines the duration for which the applied load will be averaged. The Load Averaging function will stop if the Timeout duration is elapsed or the applied load drops below the Preload value. If the Timeout is set to '0', Load Averaging function will run until the laod drops below the Preload Value.

On the Test Setup: Config: Load Averaging (LoadAveraging.html) screen, use the Navigation Keys to set the cursor on the 'Timeout' option. Press the Select key to open the numeric keypad (NumericKeypad.html). Enter the required Timeout value.





The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Timeout setting to be applied.

Peak Detection

Peak Detection is used when you want to capture the maximum load applied to a loadcell sensor. To run a Peak Detection test, the user must enable Peak Detection from the Test Setup: Configure (TestSetupConfig.html) screen. The DF3 Series gauges also gives the user an option to use a % Threshold for a Peak Detection test. When the user enables 'Use Threshold', Peak Detection starts only when the applied load exceeds the % value set of the maximum loadcell range.

Note for DFS series gauges: To minimize fluctuations of T-Pk and C-Pk values, the Peak Filter (Hz) needs to be set below 30000Hz and the Threshold ON, set to 1% or higher.

- Peak Tension
- Peak Compression

Peak Tension

When the gauge is in Peak Tension mode (T-PK), the gauge will display the maximum tensile load that was measured by the loadcell sensor. In addition to that, the user will also be able to view the Peak Tension value as a sub-reading when the gauge is in Normal or Tension Break (T-Brk) (BreakDetection.html) Mode.

Peak Compression

When the gauge is in Peak Compression mode (C-PK), the gauge will display the maximum compression load that was measured by the loadcell sensor. In addition to that, the user will also be able to view the Peak Compression value as a sub-reading when the gauge is in Normal or Compression Break (C-Brk)

(BreakDetection.html) Mode.

To enable Peak Detection, the user must navigate to the Test Setup: Configure (TestSetupConfig.html) screen and select the Peak Detection option. The Peak Detection (PeakDetection.html) screen allows the user configure the following settings:

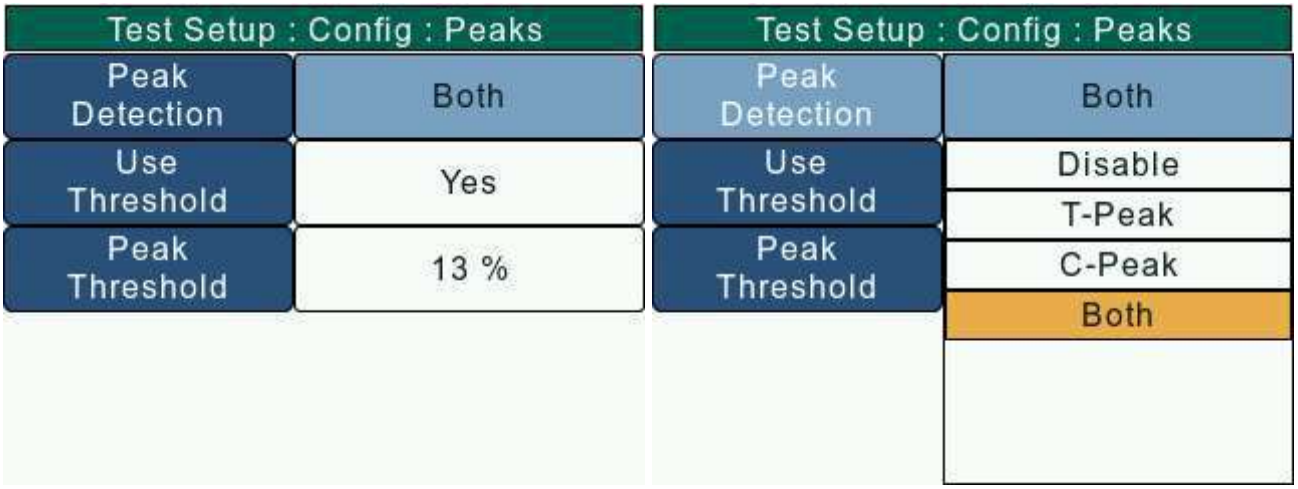
- Peak Detection
- Use Threshold

Peak Detection

From the Test Setup: Config: Peak Detection (PeakDetection.html) screen, use the navigation keys to set the cursor on the 'Peak Detection' option. Press the select key to toggle between 4 options shown below. Peak Detection is 'Disabled' or 'Enabled' automatically by selecting on out of 'T-Peak' or 'C-Peak' or 'Both'. This will define which gauge mode (Tension or Compression or Both), that the peak detection will become active over.

The Peak Detection menu will offer:

- Disable
- T-Peak
- C-Peak
- Both

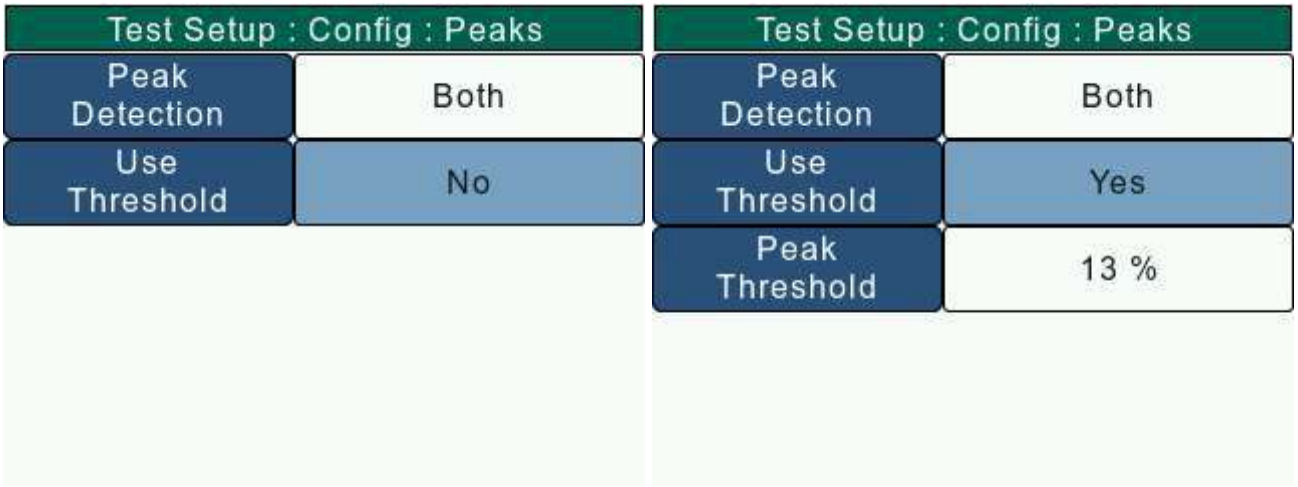


The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Peak Detection settings to be applied.

Use Threshold

This setting allows the user to choose whether or not to use threshold for Peak Detection.

On the Test Setup: Config: Peak Detection (PeakDetection.html) screen, use the Navigation keys to set the cursor on the 'Use Threshold' option. To change the Use Threshold option, press the Select key to toggle between 'Yes' and 'No'.



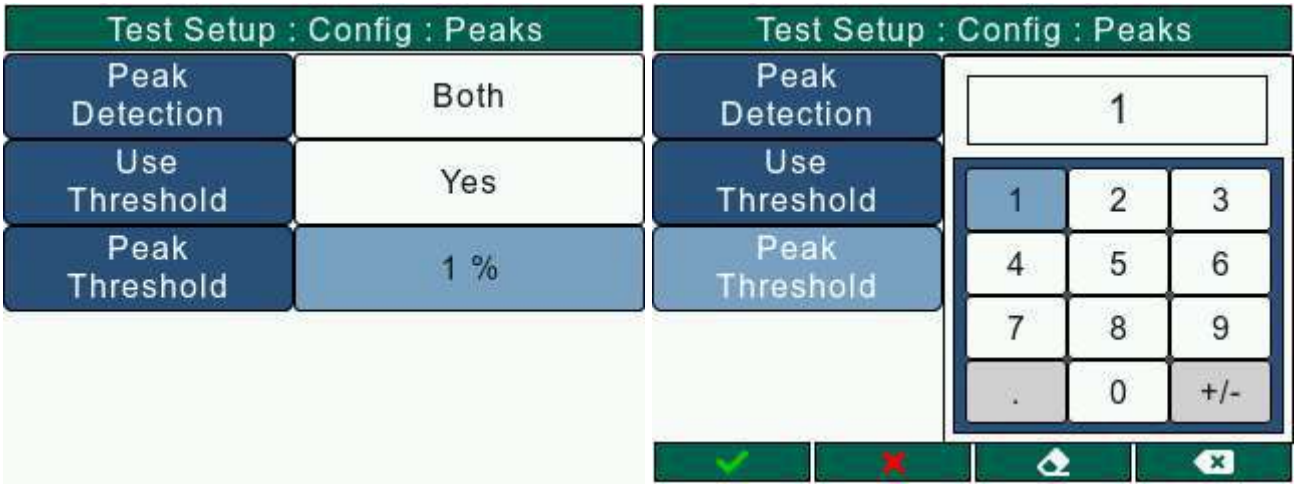
The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Use Threshold settings to be applied.

Peak Threshold

The 'Peak Threshold' defines the minimum force appplied that'll be registered as a Peak value. It is important to set a correct "Peak Threshold" based on the gauge model in order to attenuate the noise.

The Peak Threshold value is set as a percentage of the maximum gauge capacity.

On the Test Setup: Config: Peak Detection (PeakDetection.html) screen, use the Navigation Keys to set the cursor on the 'Peak Threshold' option. Press the Select key to open the numeric keypad (NumericKeypad.html). Enter the required Peak Threshold value.



The user will have to exit the Configuration (ConfigurationScreen.html) screen and save changes for the Peak Threshold setting to be applied.