



Transmation

QuikCal™ 190 Family Multifunction Calibrators

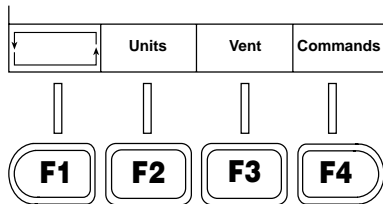
Quick Start Guide



*All the information you need to get up
and running as quickly as possible.*

SOFT FUNCTION KEYS

The Soft Function Keys are used in conjunction with the corresponding menu choices displayed on the screen.



Four boxes containing command choices are displayed at the bottom of each screen. Pressing the corresponding Soft Function Key executes that command. If there is a hard key equivalent of a Soft Function Key, the hard key operates the same as the Soft Function Key.

CONTROL KEYS

The Control Keys are used to control calibrator operation.



To turn power on, press the **Power** pushbutton. To turn the power off, press the **Power** pushbutton again.



When pressed, **Setup** calls up the Setup menu. Refer to "Setup Mode" for complete information on the Setup menu. (See User's Guide page 32.)



When pressed, **Contrast** adjusts the display contrast. Each time the pushbutton is pressed, the display contrast changes. Twenty contrast levels are provided.



When pressed, **Brightness** adjusts the display brightness. Each time the pushbutton is pressed, the brightness intensity changes. Six brightness levels are provided.



When pressed, **Enter** accepts the current entry or prompt response.

STEP KEYS

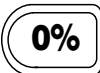
The Step Keys allow convenient stepping, zero, and full scale values to be entered with one key stroke. The default step size is 25%.



When pressed, the **100%** key sets the output of the QuikCal 190 to the value entered in the Setup menu for "Full Scale." In addition, when a list box is displayed, pressing this key moves the cursor to the bottom of the list.

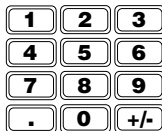


When pressed, the **Step Up/Step Down** keys increase/decrease the output of the calibrator by the increment programmed in the Setup menu for "Step Size." In addition, when a list box is displayed, pressing the **Step Up** or **Step Down** key moves the cursor to the next item in the list.



When pressed, the **0%** key sets the calibrator output to the value entered in the Setup menu for "Zero." In addition, when a list box is displayed, pressing this key moves the cursor to the top of the list.

NUMERIC INPUT KEYS



The Numeric Input Keys permit direct numerical entry of a positive or negative value.

SELECTING DATA WINDOWS

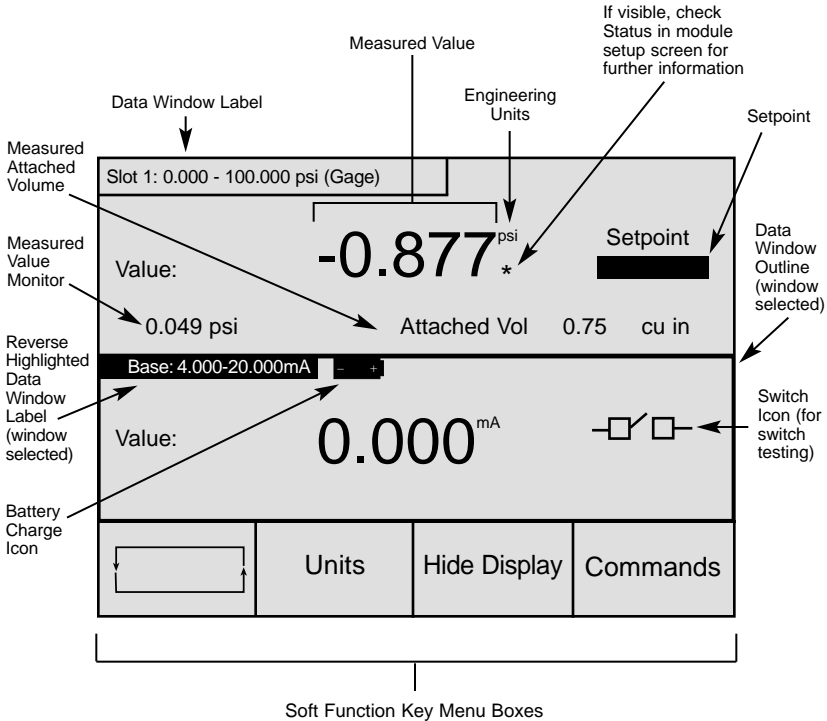
The display normally contains two (Slot 1 and Base) or three (Slot 1, Slot 2, and Base) data windows, depending on the number of modules plugged in. Only one data window is selected at a time. To select a data window, press the key. The label will reverse highlight and a thick outline will appear around the selected data window. The Soft Function Keys displayed at the bottom of the screen relate to the selected data window.

Slot 1: 0.000 - 100.000 psi (Gage)			
Value:	0.000 ^{psi}	Setpoint	Vented
		Attached Vol	0.75 cu in
Base: 4.000 - 20.000 mA <input type="checkbox"/> <input checked="" type="checkbox"/>			
Value:	0.000 ^{mA}	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	Units	Vent	Commands

Slot 1: 0.000 - 100.000 psi (Gage)			
Value:	0.000 ^{psi}	Setpoint	Vented
		Attached Vol	0.75 cu in
Slot 2: 0.000 - 30.000 psi (Gage)			
Value:	0.014 ^{psi}		
Base: 4.000-20.000mA <input type="checkbox"/> <input checked="" type="checkbox"/>			
Value:	0.000 ^{mA}	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	
<input type="checkbox"/>	Units	Hide Display	Commands

UNDERSTANDING THE DATA WINDOW DISPLAY

Each data window provides information concerning the status of the QuikCal 190 as well as electrical values being measured or pneumatic values being measured/generated.



The display will flash if a value falls outside the measurement range of the module or Base Unit. Five exclamation points ("!!!!!!") will be displayed if a measured value is significantly beyond the measurement range of the module or Base Unit.

WARNING!

Do not connect a pressure module to pressure sources greater than the pressure sensor rating. Overpressurization will result in damage to the pressure module sensor.

PERFORMING A QUICK TEST

The Quick Test feature allows a pre-configured test to be performed and recorded with just a few keystrokes.

The following test parameters can be configured:

Test - Quick Test				
1	Source:	Slot 1: 0.000 - 100.000 psi (Gauge)		
	Read:	Base: 4.000 - 20.000 mA		
2	Test Direction:	Asc.	Steps / Scan:	5
3	Recording Delay:	5	Repeat Count:	1
4	Fail Limit - % FS:	0.100	Alert Limit - % FS:	0.080
5	Fail Limit - % Rdng:	0.000	Alert Limit - % Rdng:	0.000
Start Test			Vent	Done

- | | | |
|---|----------------------------|--|
| 1 | Source/Read | The configured ranges and service (Source or Read) for the module and the Base Unit. These values must be configured via the Setup feature as described in "Using the Setup Feature" on page 2-25. |
| 2 | Test Direction | The direction of the test (Ascending, Descending, or Both). |
| 3 | Recording Delay | The delay (in seconds) from the time the setpoint is reached before data recording begins. |
| 4 | Fail Limit - % Full Scale | The fail limit as a percentage of full scale. |
| 5 | Fail Limit - % Reading | The fail limit as a percentage of reading. |
| 6 | Steps/Scan | The number of steps during the test. |
| 7 | Repeat Count | The number of times the test is performed. |
| 8 | Alert Limit - % Full Scale | The alert limit as a percentage of full scale. |
| 9 | Alert Limit - % Reading | The alert limit as a percentage of reading. |

To perform a Quick Test, do the following:

1. Insert a module into Slot 1 of the Base Unit.
2. Select the Base Unit data window.
3. As required, press **Setup** to configure the Service as described in "Using the Setup Feature" on page 2-25.
4. Select the Slot 1 data window.
5. Press **Setup** to configure the Engineering Units, Display Units, and Zero and Full Scale values as described in "Using the Setup Feature" on page 2-25.
6. Perform the applicable connections from the module to the device under test.
7. Press the **Commands** key to call up the Commands list.

8. Select "Quick Test", then press **Enter**.

Vent
Zero Input
Quick Test
Switch Test
Attached Volume
Measure Only
Hide Display
Show All
Error Graph
Login

9. Verify that the test parameters are correct. If not, do the following:
- Press **Setup**.
 - Use the **▲** and **▼** keys to select a parameter, then press **Enter** to call up the selection list or data entry window associated with the selected item.
 - Select an item from the selection list or enter a value, then press **Enter**.
 - Press the **Save Changes** key.
10. Press the **Start Test** key to start the Quick Test.

Test - Quick Test			
Source:	Slot 1: 0.000 - 100.000 psi (Gauge)		
Read:	Base: 4.000 - 20.000 mA		
Test Direction:	Asc.	Steps / Scan:	5
Recording Delay:	5	Repeat Count:	1
Fail Limit - % FS:	0.100	Alert Limit - % FS:	0.080
Fail Limit - % Rdng:	0.000	Alert Limit - % Rdng:	0.000
Start Test		Vent	Done

11. When the test sequence is complete, press the **Show Results** key to view the test results.

Test - Quick Test			
Source:	Slot 1: 0.000 - 100.000 psi (Gauge)		
Read:	Base: 4.000 - 20.000 mA		
Test Direction:	Asc.	Steps / Scan:	5
Source:	<div style="font-size: 2em; font-weight: bold;">0.049</div>		
Read:			
Start Test	Show Results	Vent	Done

12. When the test results have been noted, press the **Done** key.

Test - Quick Test				
Source (in H2O)	Read (mA)	Expected (mA)	Error (mA)	Tolerance (mA)
0.00	4.226	4.000	0.226	0.016 F
27.50	8.649	8.000	0.649	0.016 F
55.00	13.064	12.000	1.064	0.016 F
82.50	17.442	16.000	1.442	0.016 F
110.00	21.794	20.000	1.794	0.016 F
			Done	

13. Press the **Done** key to exit the Quick Test screen.

SWITCH TESTING

Setting Up a Switch Test

To set up a switch test, do the following:

1. Select the Slot 1 data window.
2. Call up the Commands list by pressing the **Commands** key.
3. Select "Switch Test," then press **Enter**.

The Switch Test screen will be displayed.

Vent
Zero Input
Quick Test
Switch Test
Attached Volume
Measure Only
Hide Display
Show All
Error Graph
Login

The screenshot shows the 'Switch Test' screen for Slot 1 (0.000 - 100.000 psi Gage). The current measurement is -0.396 psi. The setpoint is a blacked-out field. The target is 50.000 psi, with a +/- range of 5.000 psi and 11 steps. The resolution is indicated by dashed lines for 'Trip Open' and 'Trip Closed'. The bottom of the screen has four buttons: Start Test, Clear, Vent, and Done.

Annotations on the left side of the screenshot:

- The anticipated trip point of the switch (points to the Setpoint field)
- The endpoints of the test relative to the Target (points to the +/- range)
- The resolution of the result (points to the Steps value)

4. Press **Setup** to select "Target", then press **Enter** to call up the Data Entry window.
5. Enter the Target value, then press **Enter**.
6. Press the **▼** key to select "+/-", then press **Enter** to call up the Data Entry window.
7. Enter the "+/-" value, then press **Enter**. Note that the **0%** key equals the Target value less the "+/-" value; the **100%** key equals the Target value plus the "+/-" value.
8. Press the **▼** key to select Steps, then press **Enter** to call up the Data Entry window.
9. Enter the number of steps, then press **Enter**. Note that a greater number of steps equals increased resolution.
10. Press the **Save Changes** key.

To perform an automatic switch test, do the following:

1. Set up the switch test parameters as described above.
2. Press the **Start Test** key. "Working ..." will appear at the bottom of the display while the test is in process. An audible signal will sound and the switch's Trip Open/Trip Closed values will be indicated when the test is complete.
3. Adjust the switch as required.
4. Press the **Done** key.

MEASURING ATTACHED VOLUME

To control pressure with maximum accuracy and speed, the QuikCal 190 needs to know how much volume is attached to the compressor. The attached volume can be measured by selecting "Attached Volume" from the Commands list. When the "Attached Volume" command is selected, the following steps are taken:

1. The compressor is vented.
2. The pressure module input is zeroed.
3. The attached volume is measured.

Step 2 is only performed the first time the attached volume is calculated after the pressure module is plugged into the QuikCal 190. This allows multiple devices to be calibrated without unplugging the pressure module.

If the setpoint for Slot 1 is set before the attached volume is measured, a prompt will be displayed asking if the attached volume should be calculated. If **No** is answered, then a default attached volume of 0.75 cu. in. will be used. (NOTE: The default value is user-definable.)

Attached volume affects battery life, speed of operation, and leak detection of the QuikCal 190. To conserve energy (optimizing battery life) and increase measurement speed, minimize the attached volume by using short connections and small diameter tubing ($\frac{1}{8}$ "). In addition, a small attached volume can help identify unacceptably large leaks.

WARNING!

Pressures may reach the maximum range of the module (not to exceed 1 psi) while measuring the attached volume. Use care to ensure that attached gauges and instruments are rated for this pressure.

To measure and display the attached volume, do the following:

1. Select the Slot 1 data window.
2. Call up the Commands list by pressing the **Commands** key.
3. Select "Attached Volume", then press **Enter**.

Vent
Zero Input
Quick Test
Switch Test
Attached Volume
Measure Only
Hide Display
Show All
Error Graph
Login

"Measuring Attached Volume ..." will be indicated at the bottom of the display while the attached volume is being measured. The attached volume will be displayed in the Slot 1 data window. For best results, the attached volume should be measured each time a different device under test is connected.



SETUP MODE

The Setup key allows the configuration of the Base Unit or a module. To review and/or modify a setup parameter, do the following:



1. Call up the Setup list by pressing **Setup**.
2. Select the desired item, then press **Enter**.

Base: 4.000 - 20.000 mA
Slot 1: 0.000 - 100.000 psi (Gage)
Slot 2: 0.000 - 30.000 psi (Gage)
Maintenance

A Setup screen will be displayed. Each Setup screen displays parameters and information pertinent only to the combination of module and slot in use.

Slot 1: 0.000 - 100.000 psi (Gage)			
Service Type	0.000 - 100.000 psi		
Eng Units	psi		
Display Units	Eng. Units		
Zero	0.000 psi		
Full Scale	100.000 psi		
Display State	Visible		
Step Size	5 points	25.000 %	25.000 psi
Ouput	Disabled		
Attached Volume	0.00 cu in		
Status	Normal		
		Cancel Changes	Save Changes

3. Use the ▲ and ▼ keys to select a parameter, then press **Enter** to call up the selection list, or data entry window associated with the selected item.
4. Select an item from the selection list, or enter a value, then press **Enter**.

Slot 1: 0.0 - 100.0 psi (Gage)			
Service Type	0 - 100 psi		
Eng Units	psi		
Display Units	Eng. Units		
Zero	0.000 psi		
Full Scale	100.000 psi		
Display State	Visible		
Step Size	5 points	25.000 %	25.000 psi
Output	Enabled		
Attached Volume	0.00 cu in	Disabled	
Status	Normal		
		Cancel	Save Changes

5. When finished, press the **Save Changes** key to save the changes and exit the Setup screen.

Transmation

PO Box 837, Everett, WA 98206

1520 75th Street SW, Everett, WA 98203

For more information:

U.S.A. (800) 260-5492

Fax (800) 265-2863

Service fax (425) 446-6331

E-mail: sales@transmation.com Web:

www.transmation.com

PN/ 1886470 Rev A April 2002

©2008 Fluke Corporation. Specifications subject to change without notice. All rights reserved.

Printed.in