OPERATING THE Q200 SF6 LEAK DETECTOR

FHC FUME HOOD CERTIFIED

The Q200 is the gold standard for SF6 testing using ASHRAE 110 for fume hood testing. But it is a complex piece of equipment that can be challenging to setup and operate. But once everything is setup it is easy to use. First let's explore the menus.

Q200 Menus and Values

MAIN MENU	SUB-MENU	STANDARD VALUES FOR NORTH AMERICA
Calibrate	Cal	1.00 PPM
	Recal Int	off
	Cal Factor	0.750 - 1.250
Configure	Clean Time	01:00
	A1	This is the alarm. For fume hoods, set 0.10 ppm
	Trace Gas %	100%
	Auto zero	off
	Display	Auto
	Reset Parameters	No
	Gas Supply	Internal or External depending on Source of Argon
Diagnostics	Battery	Between 12.0 and 15.0 volts 14.6 is normal
	Temperature	49.4 C and 51.0 C
	Frequency	2.25kHz is normal but below 10kHz
	Recal	Off
	Version	200182/5.2

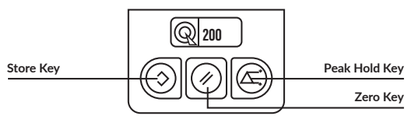
WHAT DO THE BUTTONS ON THE FACE DO?

Run (key removed): The user can make measurements, select standby mode clean the detector.

Run (key inserted): Same as run except the user can gain access.

Program (key inserted): In program mode the user can alter the program parameters.

HAND UNIT KEYS



Store: When pressed in sample mode the currently displayed reading is stored in memory.

Zero: If this key is pressed in sample mode, the instrument will take the reading at that instant as the new background reading. This will cause all ten elements on the hand unit bar graph display to be extinguished; the audio to be reset and the console display will read the minimum leak rate applicable to the current instrument configuration. If pressed whilst the 'Reset Parameters Yes' message is being displayed, then the instrument will reset all it's parameters to their default values.

Peak Hold: When pressed, all subsequent readings will be subjected to the Peak Hold function. This function monitors the peak (highest) reading taken since the last zero was performed. When enabled the audio is still free running enabling the leak site to be located. Pressing the Peak Hold key a second time will disable this function.

TIPS AND TRICKS

TIPS

The Q200 needs to be on for 30 - 45 minutes to stabilize. Before testing the first thing you should do is turn it on.

Verify that your Argon is 99.998 Pure. Contaminated or low purity is a common problem we get regularly.

Use Certificated 1 PPM calibration gas. The balance is Air (20% Oxygen in Nitrogen).

Always have the battery installed.

There are less Argon contamination issues using the internal argon as opposed to an external source.

A fully charged battery (16 hours charging) will operate the unit for about 8 hours of portable operation.

A full tank of internal Argon (2500 PSI) will last about 20 hours.

Turn gas (internal or External) off when Q200 is off.

TRICKS

Before performing a calibration, expose the probe to calibration gas. If it reads between 1.05ppm and 0.95ppm you don't need to calibrate.

If all else fails, you can reconfigure the Q200.

1. Switch the instrument on and ensure that the security key-switch is in the program position.
2. With the display reading 'Calibrate' press the ***Zero*** (hand unit) key and ***Standby\Run*** (console) key simultaneously. This will bring up a four-digit numeric configuration code on the console display. The first digit of the code will be flashing.

Digit 1: (1) American Digit 2: (1) PPM Digit 3: (0) SF6
Digit 4: (0) H Sinter Code: 1100 for North America

The volume setting on the Q200 can be adjusted whilst in sample mode. If the user presses either the ▲ or ▼ keys the new volume level will be displayed.

A frequency above 10 kHz may indicate that the detector is becoming contaminated and needs to be cleaned.

The Q200 has a 0-2VDC analogue output with Ground being pin 23 and signal being Pin 24 on the RS232 Connector.

When the unit is first turned on and warming up, you should see this scrolling across the display. ***[Warming up ~~ GAS SF6 ~~ Units PPM ~~Cal 1.00ppm ~~ A1 1.00 PPM ~~ Probe type H Sinter ~~ Display Auto]*** Then it will repeat until the unit has warmed up.

FRONT PANEL KEYS

Each key on the front panel performs a different function, a description of which follows:



Calibrate: If pressed in program mode the instrument will enter the calibration sequence.

Clean: If pressed the instrument will clean the detector by elevating the detector temperature to 110°C. The detector will remain at this elevated temperature for the period defined by the 'Clean Time' parameter in the configuration menu (see section 8 for details).

Print: If this key is pressed and a printer is connected and is online, any readings that have been stored will be printed.

Standby/Sample: This key is pressed to toggle the instrument between 'standby' and 'sample' modes, whilst the key switch is in the or → positions.

Cancel: If pressed whilst a program parameter is being displayed, then that parameter will be reset to its default setting. This key also cancels errors and exits functions such as the clean facility.

Clock Edit: This key is used to either set the date or time, if setting the date or time or to display the current date and time.

Scroll Left:
If pressed in program mode the user will move backwards within the program structure.

Scroll Right:
If pressed in program mode the user will move forwards within the program structure.

Increment:
If pressed in program mode the user can increment the currently selected program parameter. If pressed in either sample mode the user can increase the audio output volume.

Decrement:
If pressed in program mode the user can decrement the currently selected program parameter. If pressed in either run or calibrate mode the user can reduce the audio output volume.

Select:
Press to enter and exit the menu system.

WHAT DO THE SYMBOLS MEAN?

Store: When pressed in sample mode the currently displayed reading is stored in memory.

Zero: If this key is pressed in sample mode, the instrument will take the reading at that instant as the new background reading. This will cause all ten elements on the hand unit bar graph display to be extinguished; the audio to be reset and the console display will read the minimum leak rate applicable to the current instrument configuration. If pressed whilst the 'Reset Parameters Yes' message is being displayed, then the instrument will reset all it's parameters to their default values.

Peak Hold: When pressed, all subsequent readings will be subjected to the Peak Hold function. This function monitors the peak (highest) reading taken since the last zero was performed. When enabled the audio is still free running enabling the leak site to be located. Pressing the Peak Hold key a second time will disable this function.

Warning: Is a red LED that will illuminate when there is an operational problem with the unit. The units should not be used when lit.

Battery Charger: Lights up when the battery charger is connected and functioning.

Key switch: Run (key removed): The user can make measurements, select standby mode clean the detector, zero the display, select peak hold on and off, display the time and date, cancel warning messages, print stored results and clear the storage buffer.

Run (key inserted): Same as run except the user can gain access to program mode by turning the key-switch to the program position (fully clockwise).

Program (key inserted): In program mode the user can alter the program parameters.

Calibrate: If pressed in program mode the instrument will enter the calibration sequence.

Standby/Sample: This key is pressed to toggle the instrument between 'standby' and 'sample' modes, whilst the key switch is in the or positions.

Clean: If pressed the instrument will clean the detector by elevating the detector temperature to 110°C. The detector will remain at this elevated temperature for the period defined by the 'Clean Time' parameter in the configuration menu.

Cancel: If pressed whilst a program parameter is being displayed, then that parameter will be reset to its default setting. This key also cancels errors and exits functions. It is also called the zero or reset key.

Print: If this key is pressed and a printer is connected and is on-line, any readings that have been stored will be printed.

Clock Edit: This key is used to either set the date or time, if setting the date or time or to display the current date and time.

Select: Press to enter and exit the menu system.