

# CQV83000 Development Kit



The **CQV8300 Development Kit** showcases the capabilities of our CQV Capacitive Level Sensor. The CQV Capacitive Level Sensor is flexible and capable of mounting to non-conductive vessels with a smooth surface with a minimum bend radius of 5/16". The sensor provides an accurate and repeatable output of liquid level measurement from 0% full to 100% full by utilizing the liquids' permittivity across the container to non-invasively determine whether liquid is present inside the vessel.

Kit Contents:		
Description	Part Number	Quantity
Flexible Capacitive Sensor, No Adhesive	CQV1000	2
Flexible Capacitive Sensor, With Adhesive	CQV1000-PSA	2
CQV Control Box	CQV8243	1
Plastic Bottle	CQV-BOTTLE	1
USB Cable	CQV-USB	1

Specifications:					
Description	Part Number	Mounting Adhesive	Temperature Rating	Connection Method	Accuracy
Flexible Capacitive Sensor, No Adhesive	CQV1000	None	0 – 60°C	FFC	±5%
Flexible Capacitive Sensor, With Adhesive	CQV1000-PSA	Pre-installed	0 – 60°C	FFC	±5%
CQV Control Box	CQV8243	None	-20 – 80°C	USB or Screw Terminal (I <sup>2</sup> C)	±5%

## Quick Start Guide

1. Remove the adhesive sticker from the CQV1000-PSA flexible sensor
2. Adhere the sensor to the plastic bottle, assuring to minimize airgaps
3. Connect the sensor to the included CQV8243 control box using the flat flex connector
4. Connect the control box to a computer utilizing the provided USB cable. Note that the control box may also be powered from an external power supply connected to the included header or barrel jack connector. Please see the CQV User Manual for more information.
5. Open a serial terminal interface, such as Termite or PuTTY, and connect to the CQV control box using the following settings:  
**BAUD RATE: 115,200, Data: 8 Bits, Parity: None, Stop bits: 1 bit, Flow Control: None**
6. Type “version” into the command box of the serial terminal interface, then press enter to confirm communication has established and see the boards version info. An example output is  
CQV Controller SMD8243, ID 0421-SMD001, Codebase 901-8179 Rev 0.1
7. With the vessel completely empty, type “ecal” into the command box of the serial terminal interface, then press enter to perform an ‘empty’ calibration. If successful, the console will respond with  
Saved to Memory
8. With the vessel completely filled with liquid, type “fcal” into the command box of the serial terminal interface, then press enter to perform a ‘full’ calibration. If successful, the console will respond with  
Saved to Memory
9. Type “begin” into the command box of the serial terminal interface, then press enter to begin data acquisition. Data is formatted as follows:  
Sensor ID, Continuous Liquid Level, Internal Die Temperature (C), Stepwise Level, Status
10. Pour liquid into and out of the vessel and observe the corresponding change to the reported liquid level in the serial terminal program. An example output is

ID	LL %	Temp	LL Step	Status
NA001023	25.606	25	25	0b0001 0010
4E 41 30 30 31 30 32 33 0A	0x1A D2 CC 41	0x19	0x19	0x12