




mPower Electronics MP342 MUNI CaliCase 4-Bay Docking Station User Guide

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Read Before Operating

This manual must be carefully read by all individuals who have or will have the responsibility of using, maintaining or servicing this product. The product will perform as designed only if it is used, maintained and serviced in accordance with the manufacturer's instructions. The user should understand how to set the correct parameters and interpret the obtained results.



CAUTION

- USE ONLY IN AREA KNOWN TO BE NON-HAZARDOUS.
- USE OF NON-mPOWER COMPONENTS WILL VOID THE WARRANTY AND CAN COMPROMISE THE SAFE PERFORMANCE OF THIS PRODUCT

Proper Product Disposal at the End of Life



The Waste Electrical and Electronic Equipment (WEEE) directive (2002/96/EC) is intended to promote recycling of electrical and electronic equipment and their components at end of life. This symbol (crossed-out wheeled bin) indicates separate collection of waste electrical and electronic equipment in the EU countries. This product may contain one or more Nickel-metal hydride (NiMH), Lithium-ion, or Alkaline batteries. Specific battery information is given in this user guide. Batteries must be recycled or disposed of properly. At the end of its life, this product must undergo separate collection and recycling from general or household waste. Please use the return and collection system available in your country for the disposal of this product

General Information

MP342 is the MUNI Calibration and Bump Test CaliCase. All records of calibrations and bump tests performed on the CaliCase are stored in its USB disk. The CaliCase includes internal rechargeable batteries and is portable for remote use.

CaliCase comes with the following standard features

- Ability to bump test, calibrate, set configurations and upgrade firmware for MUNI
- 1 to 4 MUNIs can be tested at once.
- Rechargeable internal battery, up to 1500 bump tests before recharging
- USB flash for bump test and event log storage for up to 1 million bump tests
- 1 Internal gas cylinder plus 2 inlets: one for extra gas, one for fresh air
- 2 Buttons: one for calibration, one for bump test

This Manual describes only operation of the MUNI 4-Bay CaliCase docking station and it is assumed that the operator is already familiar with the MUNI User's Guide, including simple maintenance, firmware configurations and mPower Suite software operations

Description

MP342 Component Diagram

An exploded view of the MP342 main components is shown below.

1	Unit Cradle & LED x 4
2	Status LED
3	CAL Button
4	BUMP Button
5	USB Data Line Port
6	Air Inlet
7	Charging Port
8	Exhaust Port
9	Gas Inlet 2
10	Pressure Gauge
11	Thumb Screw x 2
12	Demand-flow Regulator
13	Gas Inlet 1 (C-10 fitting)
14	USB UDisk Port



LED Indications

The interpretations of the various LED indicators are listed below. The interpretations of the various LED indicators are listed below.

LED	Color	Description
Status LED	Green	Power on
	Green blinking	Low battery
	Orange	Charging
	Red blinking	1) USB Disk error 2) Date/time error 3) No pump detected
	None	Power off
Unit LED	Green blinking fast	Cal/bump testing
	Green blinking slow	Unit firmware upgrading
	Orange	Sensor type mismatch
	Green	1) Cal/bump test pass 2) Unit firmware upgrade pass
	Red	1) Cal/bump test fail 2) Unit firmware upgrade fail
All LEDs	Orange blinking	Cali Case firmware upgrading
	Orange	Cali Case firmware upgrade aborted

Installation and Set Up

Charging

The charging port is located on the right side of the Cali Case. Connect the DC adapter to an AC 110~240V power supply (wall outlet). A full charge takes approximately 3 hours and lasts for up to 1500 unit bump tests.

Gas Connections

Thread the main gas cylinder into the internal demand-flow regulator (DFR) [12] C10 inlet fitting [13]. Once tightly connected, the gauge [10] will indicate the cylinder gas pressure. If needed, a second gas can be connected to hose-barb port [9] using a separate DFR. We recommend that any soft tubing (e.g., Tygon) used for port [9] be kept as short as possible to minimize potential loss of calibration gas. The MP342 Cali Case is compatible with all the gases for sensors offered with the MUNI monitors.

Power On/Off

Press and hold the Cal/ button for about 3 seconds.

Initial Cali Case UDisk and Software Set Up



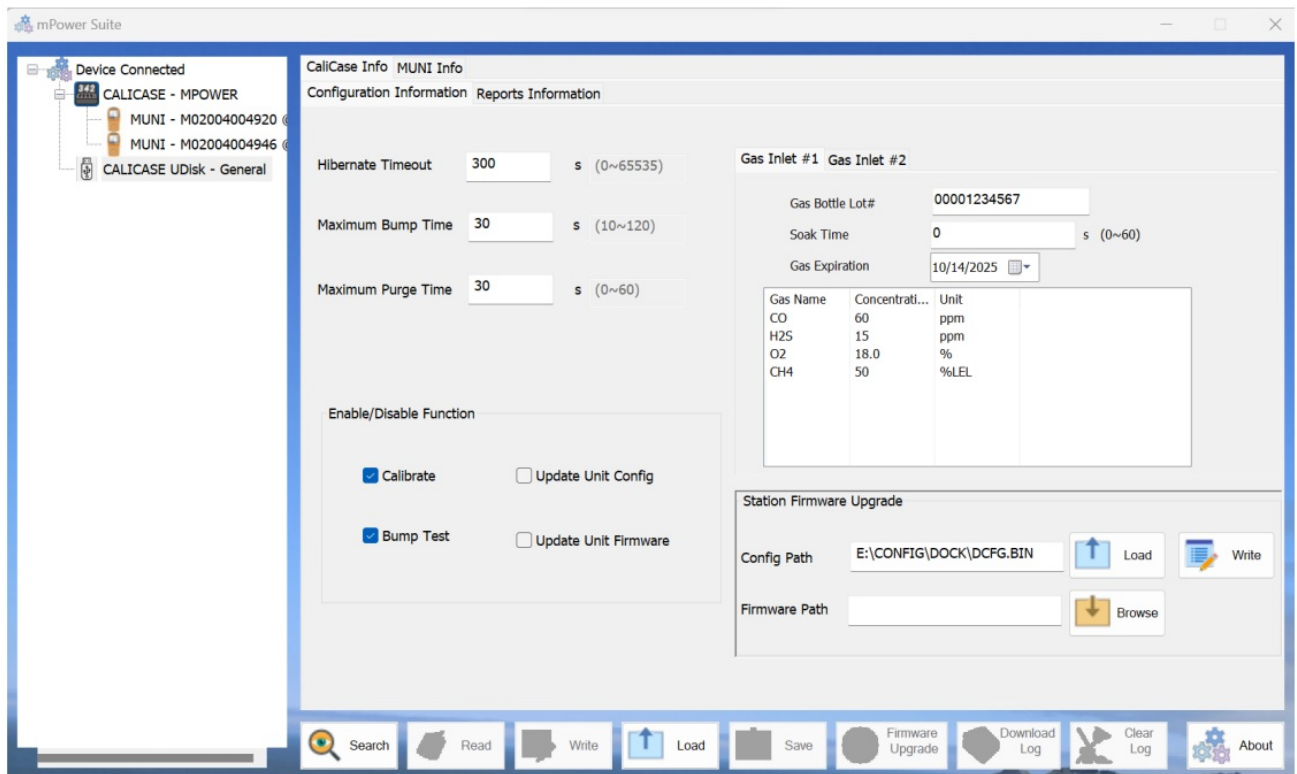
Before the first bump or calibrations can be performed, the Cali Case must be configured to match the sensor types on the MUNIs to be tested and enter the calibration gas concentrations and expiration date(s). The calibration gas is set up on both the Cali Case itself and the removable UDisk thumb drive. (The MUNI span concentrations do not need to match the CaliCase and UDisk values)

IMPORTANT!! The MP342 will not operate properly without the UDisk inserted in Port [14]!! Only the UDisk provided by mPower will function correctly.

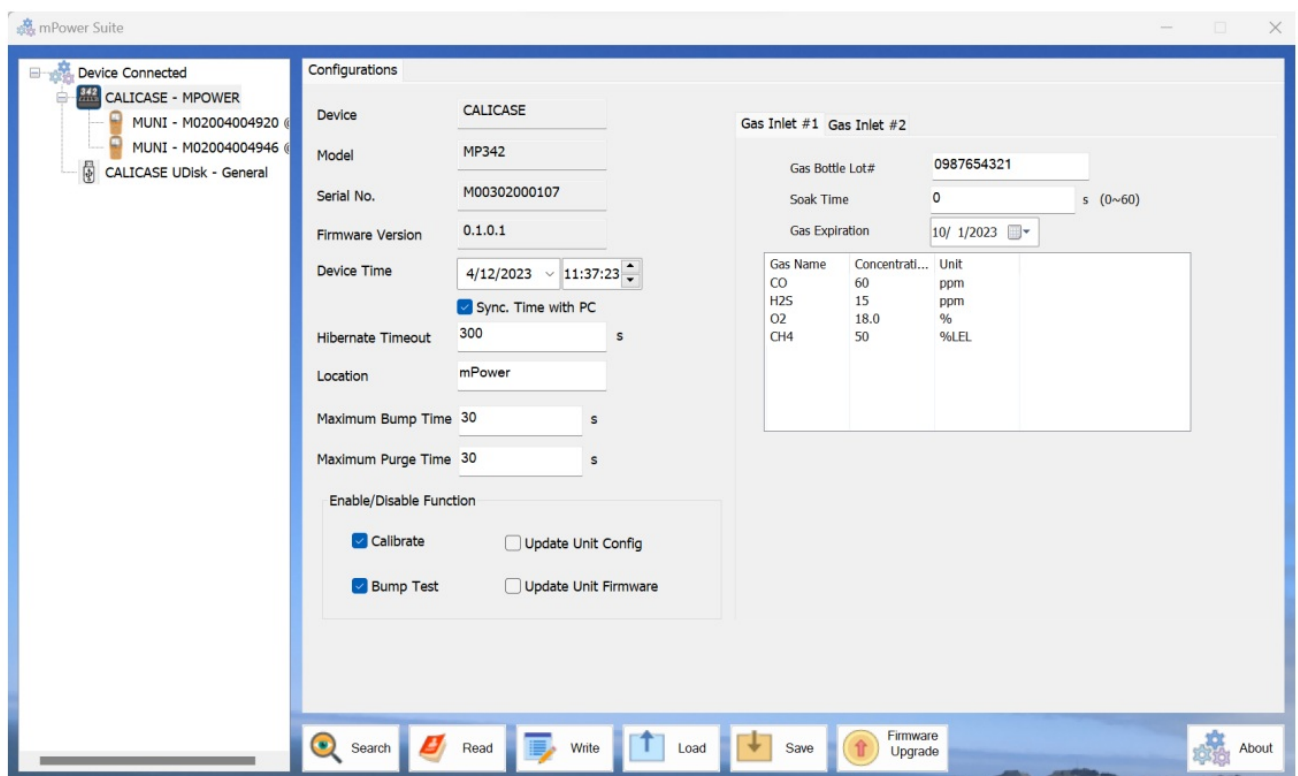
Connect the CaliCase to a PC using the Type A male-to-male USB cable at port [5]. Insert the UDisk into a USB port on the computer. Use mPower Suite software to configure the gas concentrations and other parameters. Download mPower Suite at [Software Downloads | mPower Electronics Inc.](https://www.mpowerinc.com/software-downloads) ([mpowerinc.com](https://www.mpowerinc.com)). Also, it is best to have the latest firmware installed in both the CaliCase and MUNI, as earlier firmware versions may not be fully compatible with each other.

Procedure

1. Launch the mPower Suite software.
2. Click the Search button at the bottom. The CaliCase, MUNIs and UDisk should appear listed in the left panel.
3. Click on the UDisk icon to open the CaliCase Info window and enter the calibration gas names, concentrations and units. Make sure that the gas types match those of the MUNI sensors.
4. Enter the gas cylinder lot number and expiration date, making sure that the expiration date is past the current date (but not more than 3 years from the current date). Be sure enter an expiration date for Gas #2 even no Gas #2 is used.
5. Click the "Write" button on the lower right to send the information to the UDisk.
6. Click on the MUNI Info tab and click "Write" in the middle of the screen. No parameter changes need to be made here.



7. Click on the CaliCase icon in the left panel to open its Configuration panel.
8. Enter other parameters and functions as listed below and click “Write” on the bottom bar.



- Hibernation Timeout – The CaliCase automatically turns off. Default is 300 seconds.
- Maximum Bump time – The maximum time allowed for a Bump Test. Can be set from 10-120 seconds. Default is 30 seconds.
- Maximum Purge time – The maximum time allowed for clear the gas tubing after CAL/BUMP. Can be set from 0-60 seconds. Default is 30 seconds.
- Calibrate – If not selected, the calibration function will be disabled.
- Bump test – If not selected, the bump test function will be disabled.
- Update Unit Config – If selected, the CaliCase will update the MUNI configuration when

pressing the CAL or BUMP button (see Section 5.2).

- Update Unit Firmware – If selected, the CaliCase will update the MUNI firmware when long pressing the BUMP button. The MUNI firmware must first be downloaded to the computer and the file path selected on the UDisk MUNI Info tab (see Section 5.2). Note that MP342 is only compatible with MUNI firmware version 1.0.9 or later.
 - Soak time – The time allowed for flushing the gas tubing before CAL/BUMP is initiated. Can be set from 0-60 seconds. Default is 0 seconds.
 - Gas Inlet#1 – Set gas cylinder parameters of inlet 1 (Internal gas inlet)
 - Gas Inlet#2 – Set gas cylinder parameters of inlet 2 (External gas inlet)
 - Firmware Upgrade – Select computer file to upgrade the CaliCase firmware. Obtain the latest firmware at Software Downloads | mPower Electronics Inc. (mpowerinc.com).
9. Turn off the CaliCase by holding down the Cal button. Insert the UDisk into Port [14] and then turn on the CaliCase to automatically load the UDisk parameters onto the CaliCase.

Calibration Parameter Priority

When a calibration is initiated, the CaliCase uses the parameters stored in the CaliCase itself and overrides the values stored in the MUNI configuration. Therefore, the MUNI span concentrations do not need to match the CaliCase and UDisk values. Each time the CaliCase is turned on, the calibration parameters automatically get loaded from the UDisk onto the CaliCase and override the existing CaliCase parameters. Therefore, if new values are programmed onto the UDisk via PC and inserted into the CaliCase, the CaliCase must be turned off and back on for those UDisk values to take effect.

After the first set up it is not necessary to re-configure the CaliCase directly. The direct CaliCase procedures listed above are only needed for a few items such as the Location name and syncing the device time and date.

Calibration and Bump Test Procedures

Calibration

1. Turn on 1-4 MUNI instrument(s) and place them face-down into their cradle(s).
2. If the Status LED [2] is off, turn on the CaliCase by pressing and holding the CAL button [3] until the Status LED turns green.
3. Press the CAL button [3] to initiate calibration. The Unit LED(s) [1] should blink green for about 60 to 100 seconds and then stay GREEN if passed or RED if failed.
4. A Calibration Report will be saved on the UDisk.
5. To abort a calibration, press and hold the BUMP button [4] until the Unit LED(s) turn off.
6. To power off, press CAL for about 4 seconds until the Status LED turns off.

Bump Test

1. Turn on 1-4 MUNI instrument(s) and place them face-down into their cradle(s).
2. If the Status LED [2] is off, turn on the CaliCase by pressing and holding the CAL button [3] until the Status LED turns green.
3. Press the BUMP button [4] to initiate a test. The buzzer will be tested and the Unit LED will blink green for about 30 seconds and then stay GREEN if passed or RED if failed.
4. A Bump Test Report will be saved on the UDisk.
5. To abort a calibration, press and hold the BUMP button [4] until the Unit LED(s) turn off.

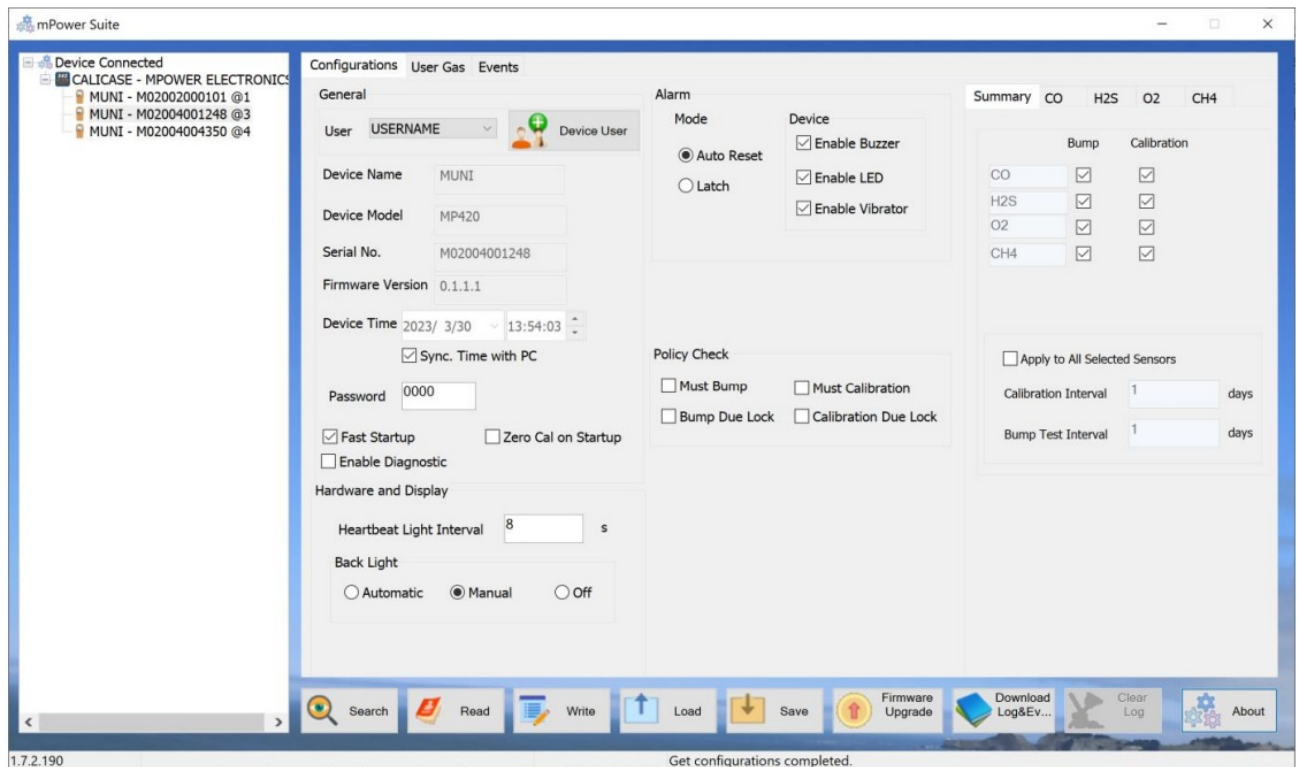
6. To power off, press CAL for about 4 seconds until the Status LED turns off.

Additional Operations

Manual MUNI Configurations

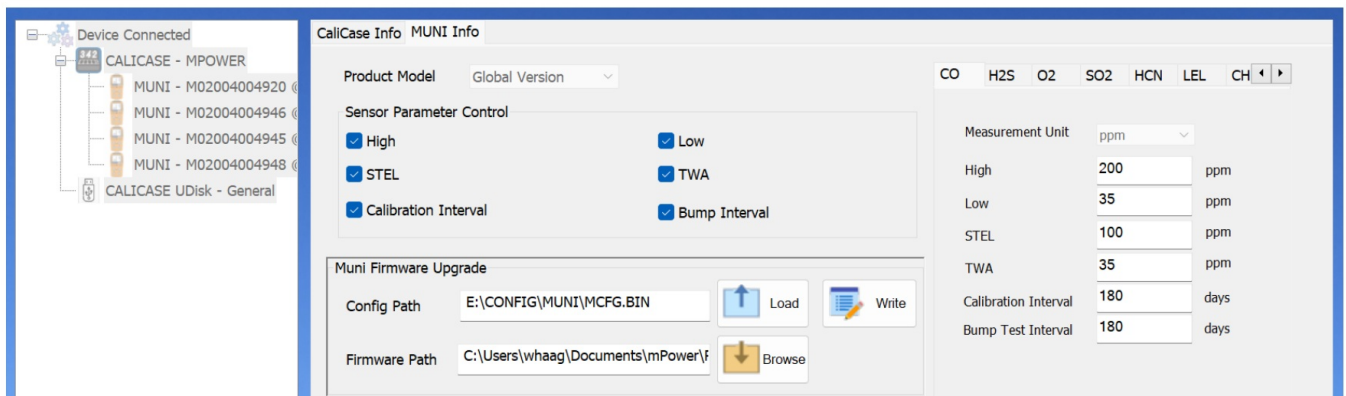
The CaliCase can be used to manually set individual MUNI configurations for field measurements. See the MUNI Manual for more information on each of the parameters including firmware upgrades.

1. Turn on 1-4 MUNI instrument(s) and place them face-down into their cradle(s).
2. Open mPower Suite and click “Search” on the bottom panel.
3. Select the MUNI from the list that appears on the left panel.
4. Adjust any configuration parameters desired and click “Write” in the bottom panel.



Automated Multiple Configuration and/or Firmware Updates

The CaliCase can be used to simultaneously update 1-4 MUNI configurations and/or firmware. To do so, the path to a saved configuration and/or firmware must be entered onto the UDisk MUNI Info tab.



1. Insert the UDisk into the PC, Open mPower Suite, click “Search” and click on the UDisk in the left panel.
2. Click “Load” to read a previously saved MUNI configuration template from the UDisk.
3. Make any parameter changes desired.
4. For firmware updates, browse the computer to select the firmware path
5. Click “Write” on the middle panel to save the MUNI configuration template and firmware to the UDisk.
6. Click on the CaliCase Info Tab and make sure that the Update Unit Config and/or Update Unit Firmware boxes are checked. If desired, also enter CaliCase Station Config and Firmware Paths. Click on Write in the Station Firmware Upgrade box.
7. Insert the UDisk memory back to the CaliCase while it is off. Then power it on to transfer the UDisk information to the CaliCase. If a CaliCase firmware path was entered, it will update itself automatically.
8. Turn on 1-4 MUNI instrument(s) and place them face-down into their cradle(s)
9. The configuration of all the MUNIs will be automatically updated when a Calibration or Bump Test is initiated.
10. Long press the BUMP button and the CaliCase will check and upgrade the firmware on all MUNI units.

The screenshot shows the mPower Suite software interface. On the left, a sidebar lists connected devices: CALICASE - MPOWER, four MUNI units (M02004004920, M02004004946, M02004004945, M02004004948), and a CALICASE UDisk - General. The main window has two tabs: 'CaliCase Info' and 'MUNI Info'. The 'CaliCase Info' tab is active, showing 'Configuration Information' and 'Reports Information' sub-tabs. Under 'Configuration Information', there are fields for 'Hibernate Timeout' (300 s), 'Maximum Bump Time' (30 s), and 'Maximum Purge Time' (30 s). Below these are checkboxes for 'Enable/Disable Function': Calibrate, Bump Test, Update Unit Config, and Update Unit Firmware. The right panel shows 'Gas Inlet #1' and 'Gas Inlet #2' settings, including 'Gas Bottle Lot#' (0000000000000001), 'Soak Time' (10 s), and 'Gas Expiration' (4/ 1/2025). A table lists gas concentrations: CO (60 ppm), H2S (15 ppm), O2 (18.0 %), and CH4 (50 %LEL). At the bottom, the 'Station Firmware Upgrade' section has fields for 'Config Path' (E:\CONFIG\DOCK\DCFG.BIN) and 'Firmware Path', with 'Load' and 'Write' buttons.

NOTES:

1. If the CaliCase has a low battery charge (Status LED is flashing in GREEN), the CaliCase will skip the firmware upgrade when it is powered on, to avoid the risk of firmware corruption.
2. The UDisk must be inserted back to the CaliCase before powering it on.

Bump/Calibration Results Download & Certificate

1. Remove the UDisk from the MP342 MUNI CaliCase and insert it into a computer. Using mPower Suite, select the UDisk when it appears in the left panel after several seconds.
2. Select the tabs for CaliCase Info and Reports Information. If desired, choose a Filter and/or Last number of Days to limit the types of Calibration or Bump events shown.
3. Select a Cal/Bump event in the middle panel. The right panel shows the event overview followed by the detailed results for each sensor.
4. Click on Summary for a list of filtered event results in tabular form.
5. Click on Certificate to complete and print a calibration certificate.

UDisk Reports Information MP342 MUNI CaliCase

Device Connected

CALICASE - MPOWER

MUNI - M02004004945

MUNI - M02004004920

CALICASE UDisk - General

CalCase Info MUNI Info

Configuration Information Reports Information

Last All days Filter No Filter Applied Summary Certificate

1 M02004004920_20230413_131151

2 M02004004945_20230413_131150

3 M02004004946_20230413_131153

4 M02004004948_20230413_131152

5 M02004004920_20230413_130852

6 M02004004945_20230413_130851

7 M02004004946_20230413_130854

8 M02004004948_20230413_130853

Overview

Calibration result,Pass

Time,="2023/04/13 13:11:51"

Test location,mPower

Test station info

Name,CaliCase

Model,MP342

Firmware ver,V0.1.0.2

SN,="M00302000113"

Cradle number,2#

Channel 1#

Gas info,H2S 15ppm CO 60ppm O2 18.0% CH4 50%LEL

Gas bottle lot,="0000000000000001"

Gas expiry date,="2025/10/01"

Channel 2#

Gas info,SO2 5ppm

Gas bottle lot,="0000000000000000"

Gas expiry date,="2025/10/01"

Detector info

Name,MUNI

Model,MP420

Firmware ver,V0.1.1.1

SN,="M02004004920"

Sensor 1#

Sensor type,CO 1000ppm

Span gas,CO 60ppm

Air reading,="0ppm"

Sensor reading,="59ppm"

Calibration result,Pass

Search

Read

Write

Load

Save


Firmware Upgrade

About

Summary

Index	Date	Time	Operation	Last Re...	Dock S/N	Location	Dock FW	Gas Lot.	Detecto...	Detecto...	Sensor	Result	Sensor...	Buzzer	LED
1	4/13/2023	13:11:51	Calibration	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	---	---
2	4/13/2023	13:11:50	Calibration	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	---	---
3	4/13/2023	13:11:53	Calibration	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	---	---
4	4/13/2023	13:11:52	Calibration	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	---	---
5	4/13/2023	13:08:52	Bump Test	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	Passed	Passed
6	4/13/2023	13:08:51	Bump Test	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	Passed	Passed
7	4/13/2023	13:08:54	Bump Test	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	Passed	Passed
8	4/13/2023	13:08:53	Bump Test	4/13/2023	M00302...	mPower	V0.1.0.2	000000...	M02004...	V0.1.1.1	CO,H2S,O2,LEL	Passed	Passed	Passed	Passed

Certificate Management



CERTIFICATE OF MONITOR CALIBRATION

DATE
4/13/2023

ASSET ID #

CALIBRATED BY

TITLE

APPROVED BY

TITLE

SIGNATURE (with date)

INSTRUMENT INFORMATION

CALIBRATION RESULT
PASS


Brand
mPower Electronics


Serial #
M02004004920

Model #
MP420

Sensor Type	Gas	Concentration	Post Cal Reading
CO	CO	60ppm	59ppm
H2S	H2S	15ppm	14.8ppm
O2	O2	18.0%	17.9%
LEL	CH4	50%LEL	50%LEL

Calibration Gas	Mix	Calibration Gas	Single
Expiration Date	10/1/2025	Expiration Date	10/1/2025
Lot # 1	00000000000...	Lot # 2	00000000000...
Manufacturer		Manufacturer	


Print Certification


Cancel

Replacement Parts

Description	Part Number	List Price*
USB cable, docking stations to computer, Length 50 cm	M410-0002-001	\$25.00
UDisk, 16G, for MP342 MUNI Calicase	M490-0145-001	\$22.00

* These prices are for reference and may change at any time. Please refer to the latest version of the mPower List Price Guide or contact mPower for a quotation

UDisk



USB Cable



Technical Support and mPower Contacts

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Phone: (408) 320-1266



Fax: (669) 342-7077

info@mpowerinc.com

www.mpowerinc.com



Documents / Resources

<p>MUNI CaliCase 4-Bay Docking Station MP342</p> <p>User Guide</p>  	<p>mPower Electronics MP342 MUNI CaliCase 4-Bay Docking Station [pdf] User Guide MP342 MUNI CaliCase 4-Bay Docking Station, MP342, MUNI CaliCase 4-Bay Docking Station, CaliCase 4-Bay Docking Station, 4-Bay Docking Station, Docking Station, Station</p>
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References

- [Gas detector, alarm systems equipment supplier](#)