OLDHAM

BM25 and BM25 Wireless

Class Modules

Module 1 – BM25 Features and Benefits

Unit Specification
Sensor Configuration
Features and Benefits

go!

Module 2 – Wireless Option

go!

Module 3 – BM25 Operations

External Features
Sample Draw Pump Operations
Display Options
Battery Types and Capabilities
Basic BM25 operations

go!

Class Modules

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Calibration Policy
Calibration Procedure

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Entering into the BM25 Configuration Menu
Setting Alarms
Zeroing
Setting Date and Time

Class Modules

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Programming Channels
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Checking Card & State Card Setup and Usage
I/O Configuration
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Class Modules

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Sensor Technology
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Date Code Interpretation

BM25

Features & Benefits

Module 1

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BM25 Specifications

The BM25 was designed for team protection or area surveillance, the unit is most suitable for perimeter monitoring, rig overhauls and mobile or short-term work in areas where fixed detection systems are not suitable.

- **Case Material:**
  Impact resistant polycarbonate
- **Dimensions:**
  425 mm x 160 mm x 130 mm
  (16.7″ x 6.3″ x 5.1″)
- **Sensors:**
  Combustible - Catalytic or Infrared
  Oxygen and Toxic Gases – Electrochemical
  Carbon Dioxide – Infrared
  VOC – PID

PID and LEL IR sensors are not CSA certified

BM25 Specifications

- **Weight:**
  6.8 kg (15 lbs)
- **Display:**
  Graphic liquid display with backlight
- **Datalogging Capabilities:**
  700 hours with 5 gases (200,000 measurements)
- **Audible Alarm:**
  103 dB @ 1 meter
- **Visual Alarm:**
  Ultrabright LED beacon visible 360 degrees
- **Operating Temperature Range:**
  -20°C to +55°C (-4°F to +131°F) typical

BM25 Specifications

- **Operating Humidity Range:**

  15% - 95% non-condensing (continuous) typical

- **Power Source/Run Time:**

  Nickel-Metal Hydride/Up to 170 hours

- **Recharge Time:**

  4.5 hours typical

- **Certifications:**

BM25	**BM25A**
IECEx & ATEX	CSA
II 1 G / I M1 (w/o IR module)	Class I, Div 1, Gr ABCD
II 2 G / I M2 (with IR module)	

BM25 Measuring Ranges

- **Measuring Ranges:**

Combustible Gases: 0-100% LEL in 1% increments
Oxygen: 0-30% by volume in 0.1% increments
Carbon Monoxide: 0-1,000 ppm in 1 ppm increments
Hydrogen Sulfide: 0-100 ppm in 1 ppm increments
Hydrogen: 0-2,000 ppm in 1 ppm increments
Sulfur Dioxide: 0-30 ppm in 0.1 ppm increments
Chlorine: 0-10 ppm in 0.1 ppm increments
Nitrogen Dioxide: 0-30 ppm in 0.1 ppm increments
Nitric Oxide: 0-300 ppm in 1 ppm increments
Hydrogen Chloride: 0-30 ppm in 0.1 ppm increments
Hydrogen Cyanide: 0-10 ppm in 0.1 ppm increments
Ammonia: 0-1,000 ppm in 1 ppm increments
Phosphine: 0-1 ppm in 0.01 ppm increments
Arsine: 0-1 ppm in 0.01 ppm increments

BM25 Measuring Ranges

- **Measuring Ranges (continued):**

Silane: 0-50 ppm in 0.1 ppm increments
Carbon Dioxide: 0-5% by volume in 0.1% increments

One gas is missing? Contact us at:

support@oldhamgas.com

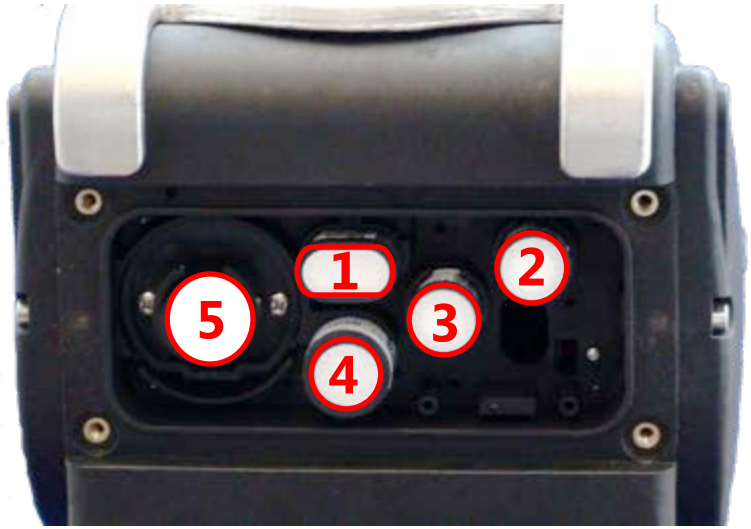
BM25 Features & Benefits

Feature: Interchangeable/field replaceable sensors.

Benefit: Provides flexibility of monitoring in a variety of applications. Reduces operating costs and downtime associated with instrument/sensor service.

When a slot is vacant, a dummy sensor (black piece) has to be put in place to preserve IP66 level of protection.

BM25 Sensors Configuration



Slot #1 is only for cat. bead LEL sensor
Slot #2 is only for mini sensors
Slot #3 is only for mini sensors
Slot #4 is only for medium sensors
Slot #5 is only for medium sensors

When slot #5 is occupied, channel #2 is ignored

PID and IR LEL sensors can only fit in slot #5

O2 sensors are available in mini or medium format. As medium sensor's lifetime is 2 years and 1 year for the mini version, always prioritize the two-year version.

BM25

	Sensor Position 1	Mini Sensor Position 2	Mini Sensor Position 3	Medium Sensor Position 4	Medium Sensor Position 5
LEL (Pentane) sensor	K				
LEL (Methane) sensor	L				
CH4 (0-5%) sensor	M				
CO sensor (0-1000ppm)		1	1		
H2S sensor (0-100ppm)		2	2		
O2 sensor (0-30% vol.)		3	3	3	3
NO2 sensor (0-30ppm)		4	4	4	4
SO2 sensor (0-30ppm)				5	5
NH3 sensor (0-100ppm)		6	6		
Cl2 sensor (0-10ppm)		7	7	7	7
ClO2 sensor (0-3ppm)				8	8

As an example, H2S sensor is a mini sensor and can fill position #2 or #3.

BM25 Features & Benefits

Feature: High capacity nickel-metal-hydride battery pack.

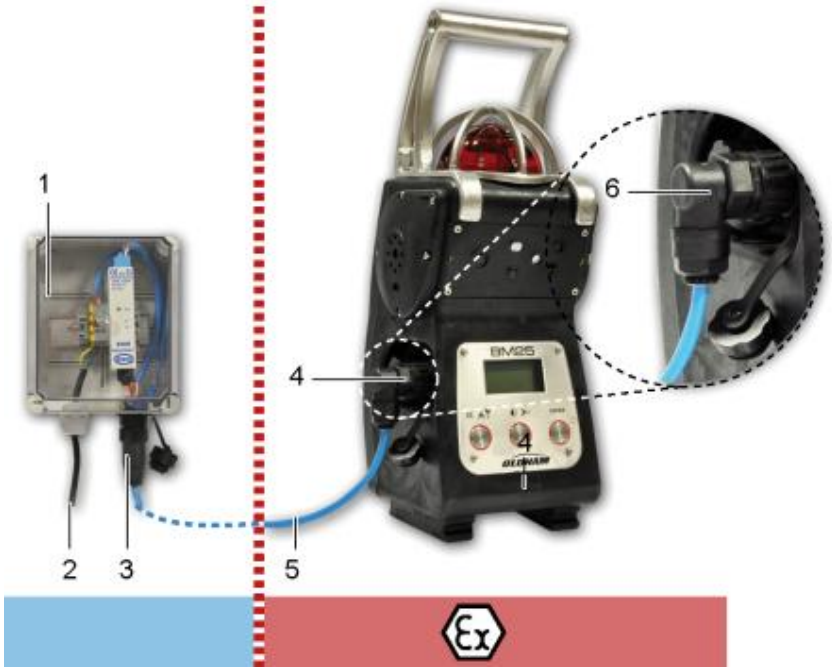
Benefit: Provides long run times, up to 100 hours with the combustible sensor (typical) and 170 hours without the combustible sensor, in continuous monitoring applications.

Configuration	Runtime (hours)
1 catalytic and 2 infrared (LEL+CO2) or IR+PID	40
1 catalytic and 1 IR (or PID)	70
1 catalytic and several Tox	100
Only Tox sensors	170

BM25 Features & Benefits

Feature: Intrinsically safe remote power supply.

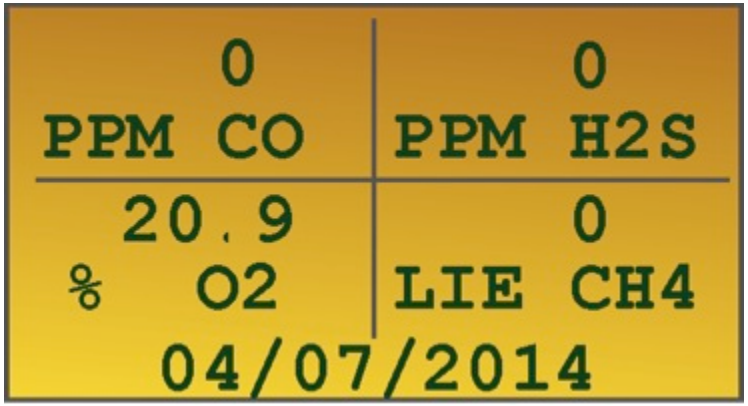
Benefit: Provides for continuous run time in hazardous locations through connection to 110/230 volt power mains in a safe area.



BM25 Features & Benefits

Feature: Simultaneous display of all gases monitored.

Benefit: Provides confidence and ease of use for the operator to view all gas readings immediately at a single glance and allows for uninterrupted work time.



BM25 Features & Benefits

Feature: 2 x 103dB@1 meter audible alarms (mark #3)

Benefit: Produces clear warning of unsafe conditions in high noise areas.

BM25 Features & Benefits

Feature: Ultra-Bright 360° visual alarm beacon.

Benefit: Twenty ultra-bright LEDs provide clear visual indication of alarms, viewable in all environments, from all directions.

BM25 Features & Benefits

Feature: Stand-up design.

Benefit: Allows unit to be placed on any flat surface to provide stand-alone area surveillance and protection.

BM25 Features & Benefits

Feature: Concave face design and construction.

Benefit: Ensures that sensors are protected and not blocked from the atmosphere in the event that the instrument is knocked on its face or side in a chaotic work environment

BM25 Features & Benefits

Feature: Optional internal sampling pump.

Benefit: Allows the monitor to be used for remote sampling applications in confined spaces providing clear alarm signaling to the area outside of the confined space.

⚠ pumped version is not CSA certified

BM25 Features & Benefits

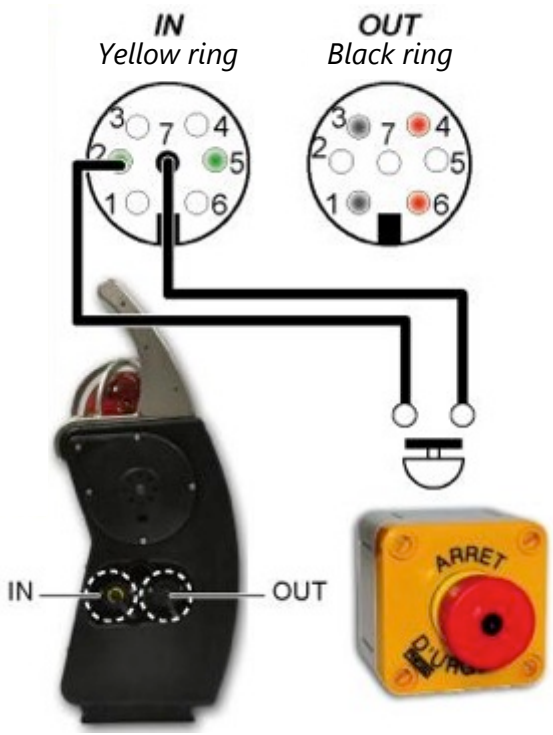
Feature: Output relay.

Benefit: Allows for connection to remote alarm and fault indication devices to provide additional warning indications in continuous area monitoring applications.

BM25 Features & Benefits

Feature: Manual alarm activation input.

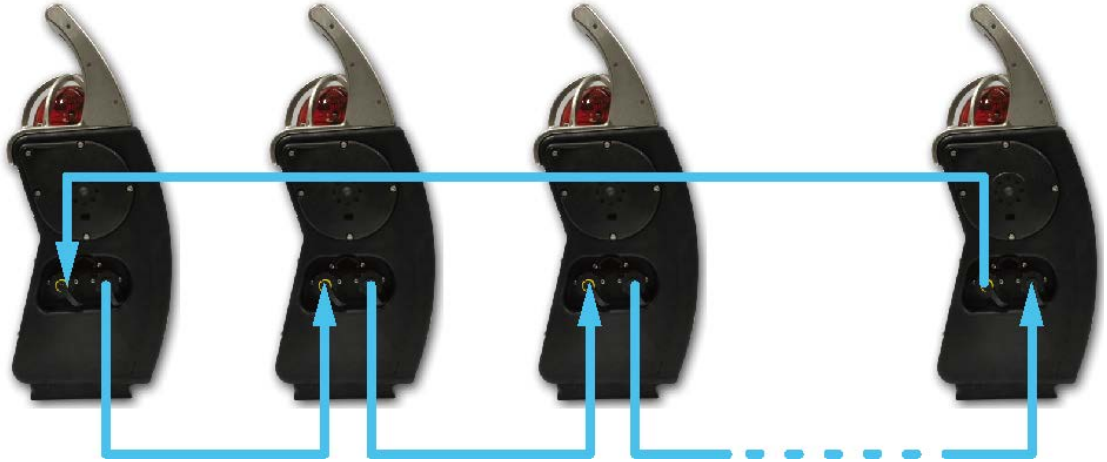
Benefit: Provides ability for manual activation of the unit's alarm in a work area to request emergency assistance or signal other workers of dangerous conditions.



BM25 Features & Benefits

Feature: Alarm transfer function.

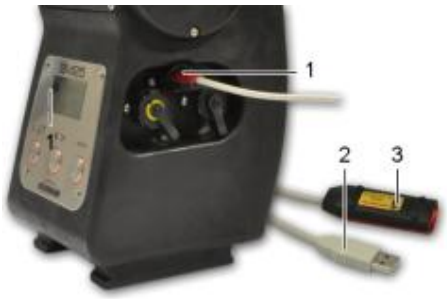
Benefit: Allows units to function as alarm relay devices, communicating dangerous conditions to workers in a surrounding environment.

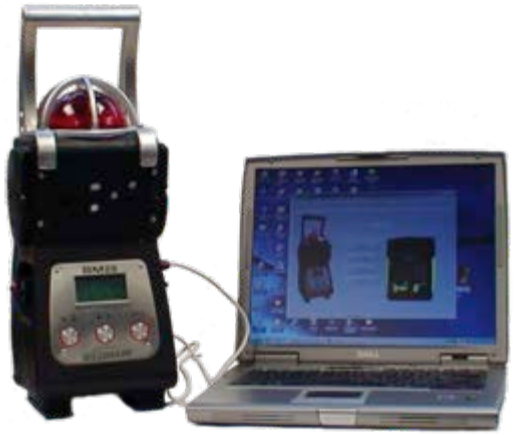


BM25 Features & Benefits

Feature: Continuous datalogging and STEL/TWA functions.

Benefit: Provides real-time data exposure analysis and record keeping. Allows unit to be in an area to collect industrial hygiene survey data as well as provide area protection and surveillance.





BM25 Features & Benefits

Feature: IP66 Ingress Protection Rating.

Benefit: Allows the unit to be used for continuous monitoring applications in harsh environment without damage from dust and water.

Back

BM25 Wireless

Features & Benefits

Module 2

Back

BM25 Wireless Protocol

The protocol used in the BM25 is built on the IEEE 802.15.4 standard (Institute for Electrical and Electronics Engineers).

The IEEE is a technical professional association that has published numerous standards that define communication in areas such as:

- the Internet
- PC peripherals
- Industrial communication
- and wireless technology.

As a few examples, the IEEE802.11 standard defines communication for wireless LAN (WLAN). First version was issued in 1997.

Wi Fi™
The Standard for Wireless Fidelity.

The 802.15.4 standard

Released in June 2005.

Developed with **3 main concepts** in mind:

- Lower data rate
- Simple connectivity
- Battery powered applications

3 authorized Frequency bands:

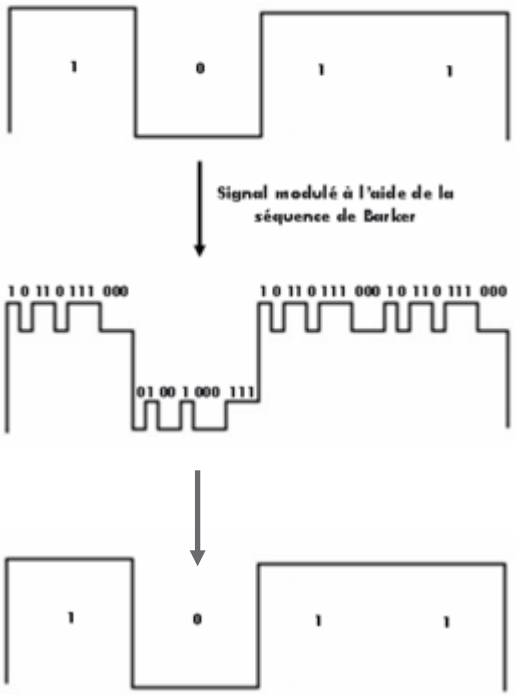
- 868-868.8 MHz (Europe)
- 902-928 MHz (USA and Canada)
- **2.4000-2.4835 GHz (ISM Band – Industrial Scientific and Medical)**

The 2.4 GHz band is more popular as it is open in most of the countries worldwide.

The 802.15.4 standard

Specifies the use of **DSSS** (Direct Sequence Spread Spectrum) as the spread spectrum modulation technique.

Each bit to be transmitted is converted into a sequence of n bits. Let's use the following coding sequence (and n=11):
- All bits equal to 1 are converted into **10110111000**
- All bits equal to 0 are converted into **01001000111**



This helps to increase the signal's resistance to interference. If any bits are damaged during transmission (for instance you get **11110111001** at point of reception), the original data can be recovered due to the redundancy of transmission (and corrected to **10110111000** in our example).

DSSS significantly improves protection against interfering (or jamming) signals. It also provides security of transmission if the code is not known to the public. These reasons make DSSS very popular by the military. **In fact, DSSS was first used in the 1940s by the military.**

The 802.15.4 standard applied to the BM25

The 802.15.4 standard also allows:

- MESH network
- Self-Healing capability
- Automatic topology adaptation
  The network automatically adapts as its topology changes, i.e., as nodes arrive at or deport from the network environment
- Fully automatic routing
  Each node connects with its immediate neighbors

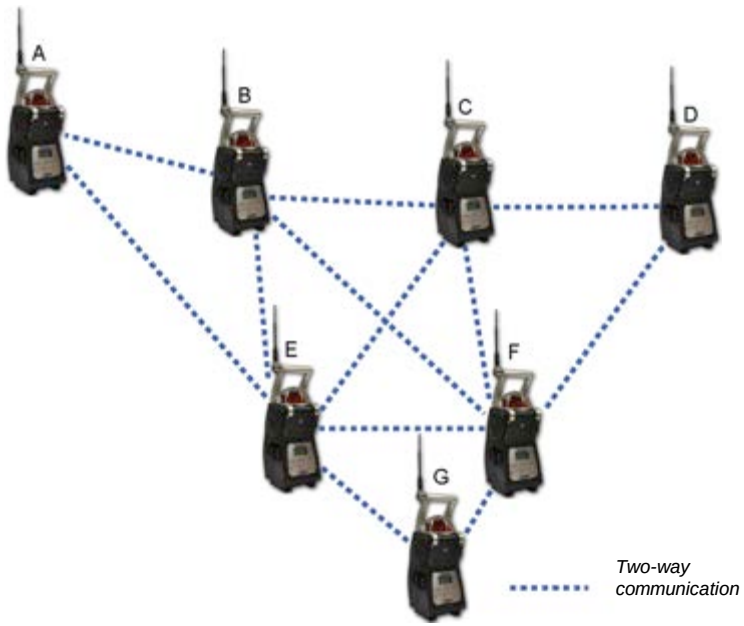
+

=

BM25 Features

Available as an option, the radio communication allows:

- several BM25 devices to communicate on the same network

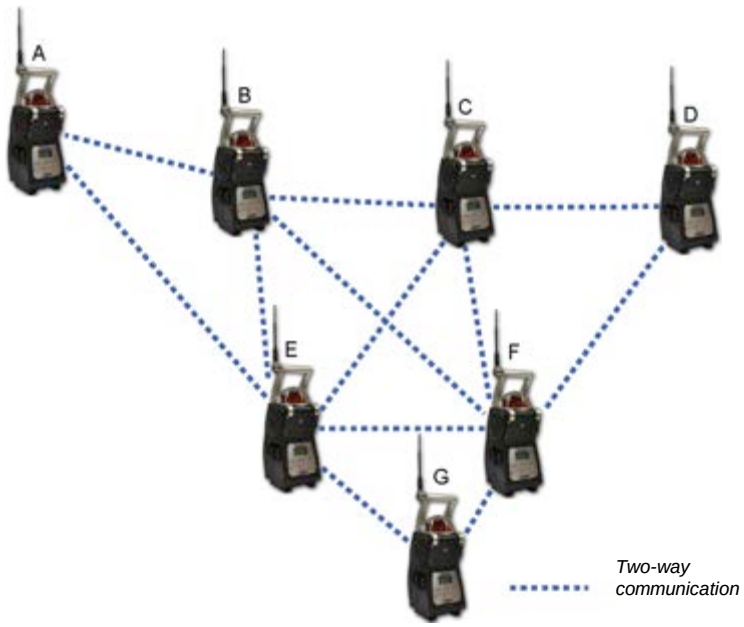


BM25 mode

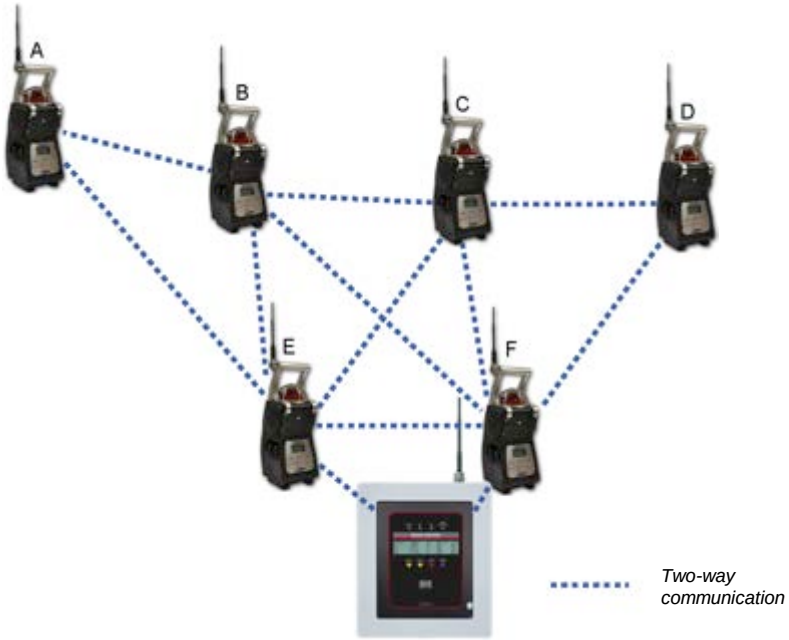
BM25 Features

Available as an option, the radio communication allows:

- several BM25 devices to communicate on the same network
- or to send information wirelessly to an X40 controller.



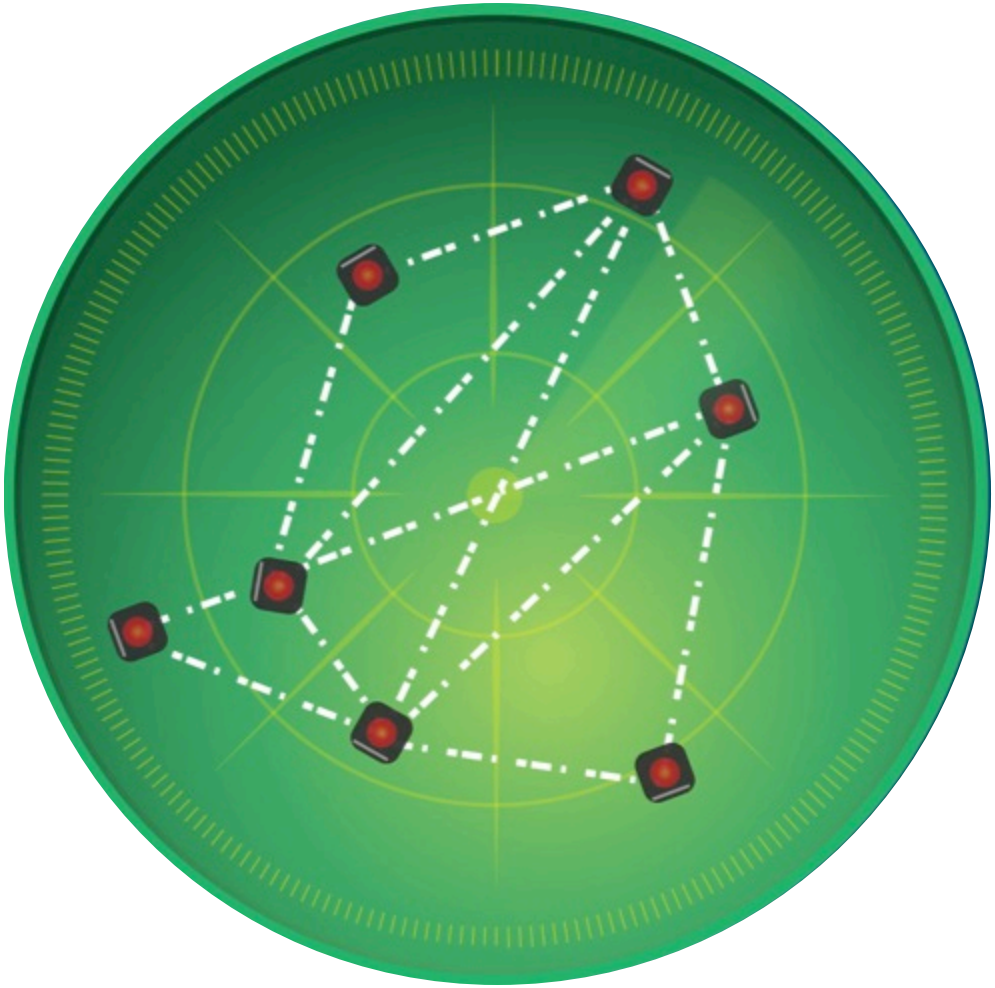
BM25 mode



Controller mode

BM25 Features

- Robust Mesh Network Topology
- Universally Accepted Frequency 2.4GhZ
- 1 Km RF line of site
- Up to 30 BM25 per RF channel
- 16 available RF channels can coexist with no interference



BM25 MESH Network

The network topology used by the BM 25A is a MESH network. In a mesh network all hosts are connected peer to peer without central hierarchy, thereby forming a net-like structure.

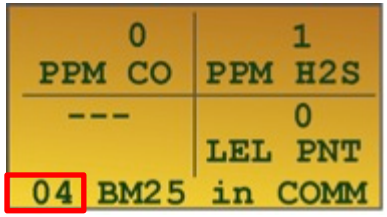
Consequently, each node can receive, send and relay data. This avoids having sensitive points, which in case of failure, cut the connection of the network. If a node is down, its neighbors go through another route.

Mesh topology allows fast and simple deployment, high coverage versatility and high fault tolerance. It significantly reduces installation and operating costs of networks. These solutions reproduce the architecture of the Internet while optimizing for wireless.

BM25 Features

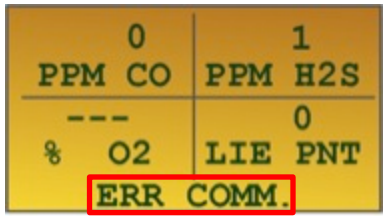
Large LCD display shows clear messages:

- number of BM25s on the same RF channel

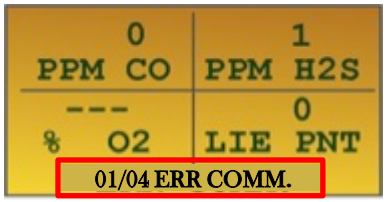


- Radio signal strength icon (like on your smartphone)

- Communication Error



- One BM25 is missing



BM25 Features

As the emitted power is less than 100 mW and communications occur every 10 seconds (unless in alarm condition), the runtime of the BM25 when in wireless mode is only decreasing by 25% in average.

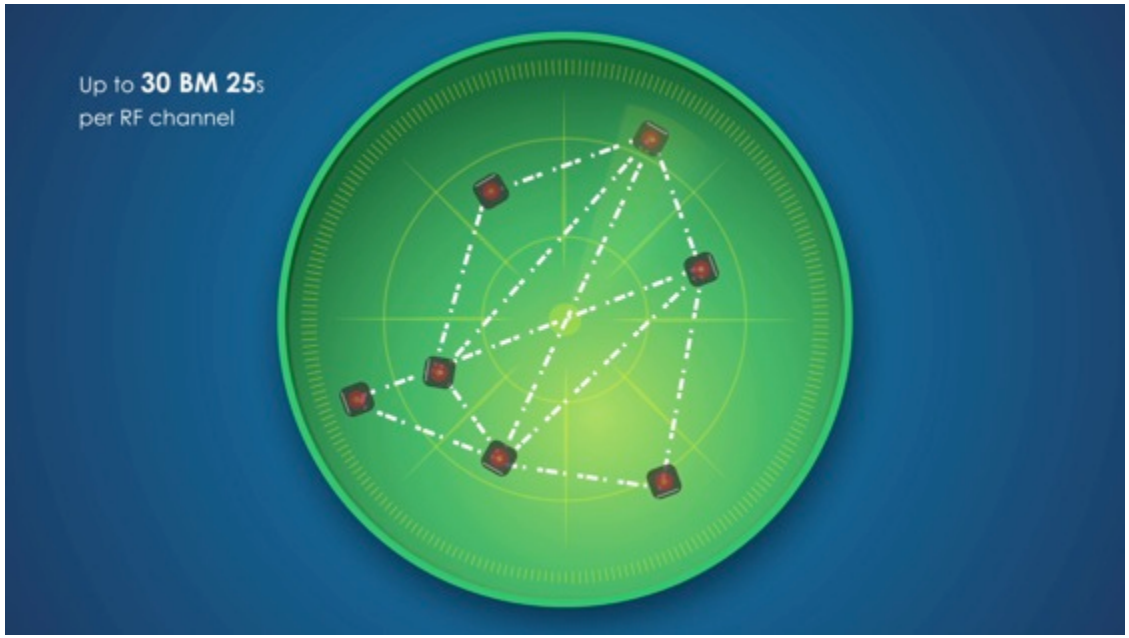
Configuration	Runtime Non-wireless (hours)	Runtime Wireless (hours)
1 catalytic and 2 infrared	40	35
1 catalytic and 1 infrared	70	50
1 catalytic and several Tox	100	65
Only Tox sensors	170	135

BM25 Features

Feature: Smart Wireless.

Benefit: Allows fast and simple deployment, high coverage versatility and high fault tolerance .

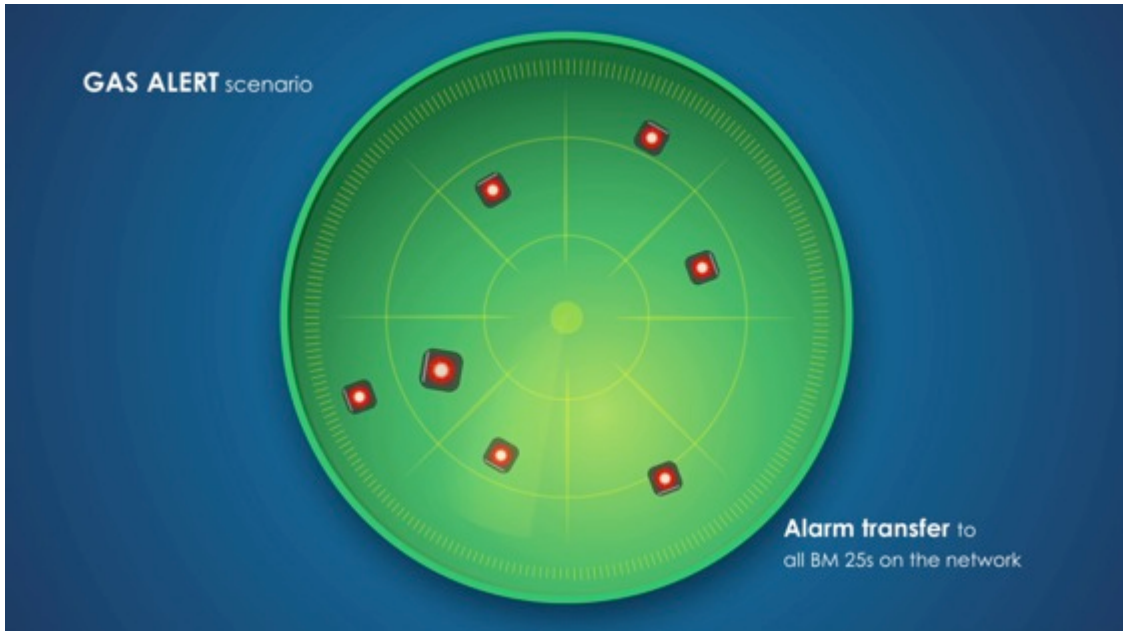
To add a BM25 on an existing network, just turn it on!



BM25 Features

Feature: Smart Wireless.

Benefit: Allows Alarm Transfer functionality without the need of a cable.

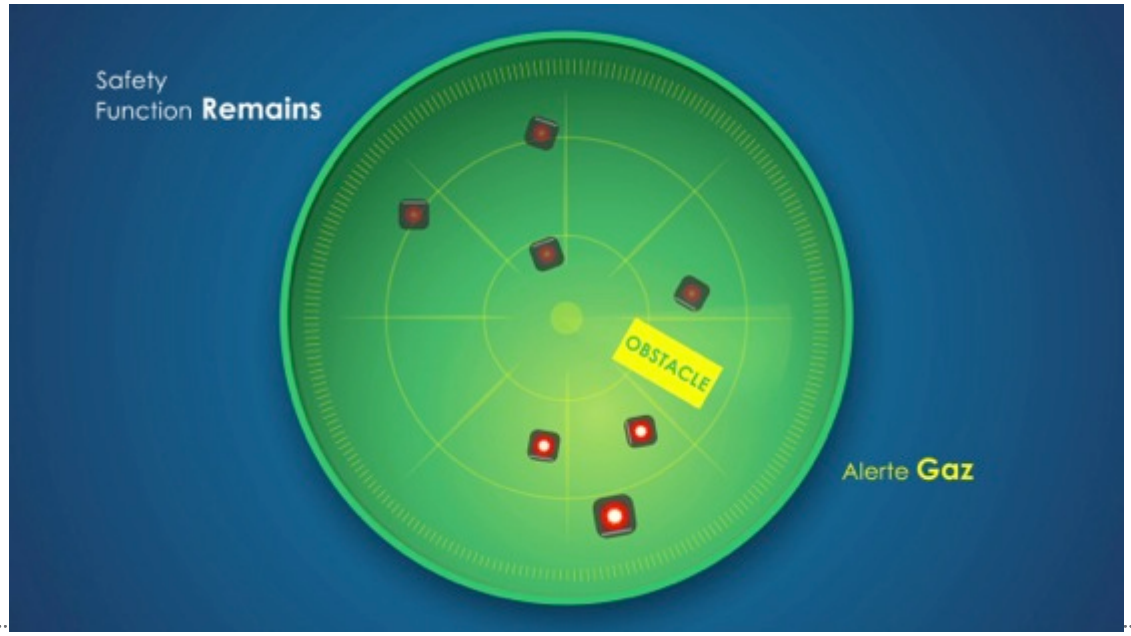


BM25 Features

Feature: Smart Wireless & Stand Alone Units

Benefit: If a BM25 does not respond or if the network is split, then it is possible to continue to work by the time of the restoration of the network.

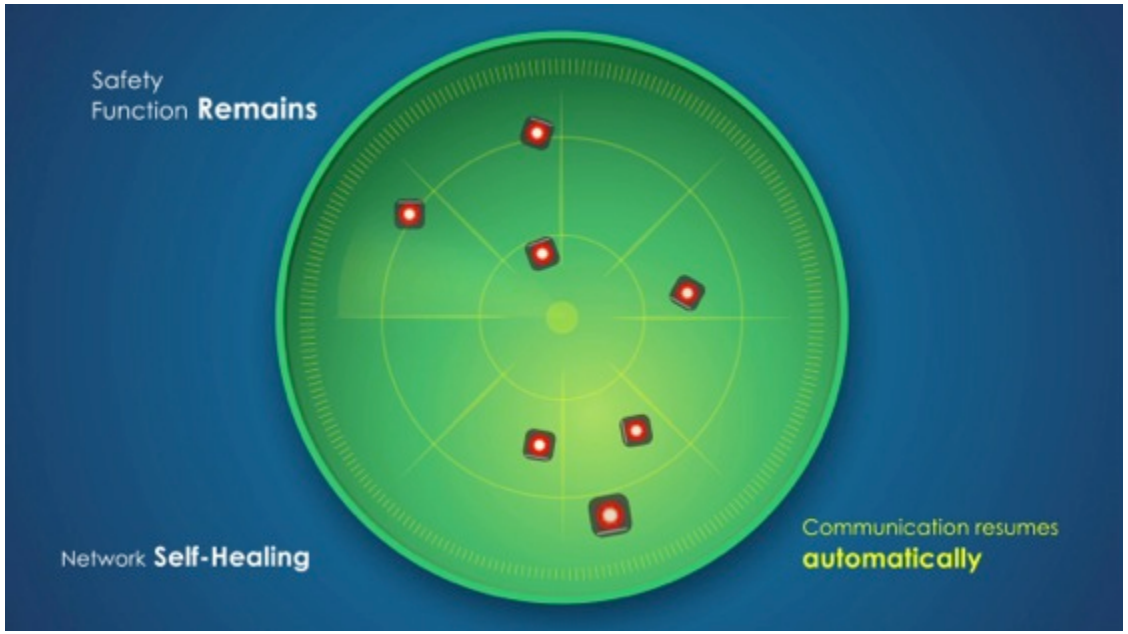
The gas detection remains effective and each BM25 would still locally alarm in the presence of gas.



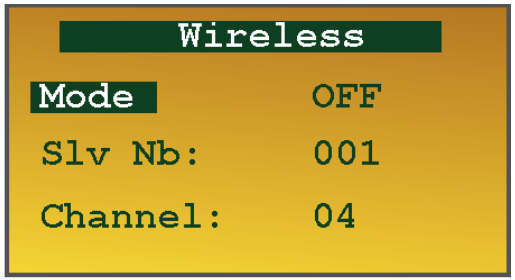
BM25 Features

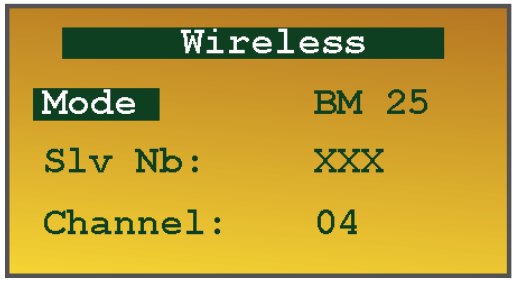
Feature: Network Self-Healing.

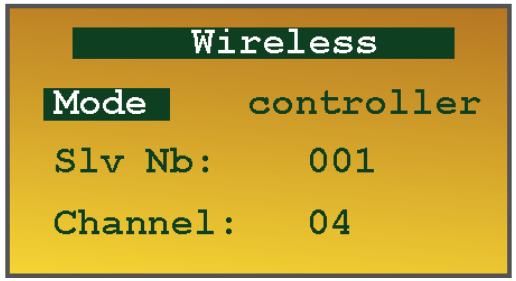
Benefit: When the obstacle is gone, the communication resumes automatically. The two groups merge together to form only one group again.



BM25 Network Settings



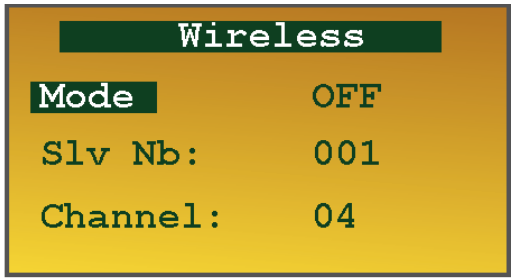


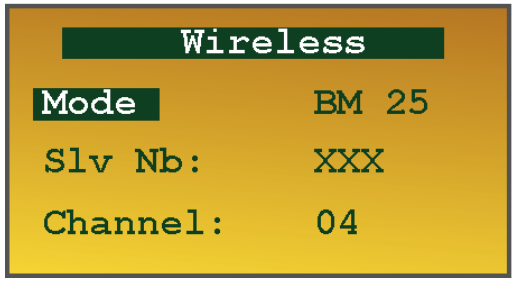


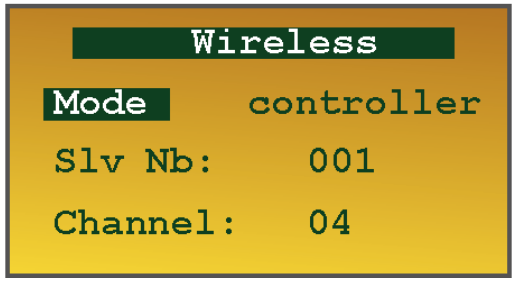
Go to the maintenance menu and enter the password (see Module #4) to access the first screen. Select 'Wireless' and Press Enter to access the 3rd screen.

Mode OFF:	to turn the wireless module off
Mode BM 25:	BM 25 will broadcast data to the other BM25s on the network
Controller:	BM 25s will send data to a Master controller

BM25 Network Settings



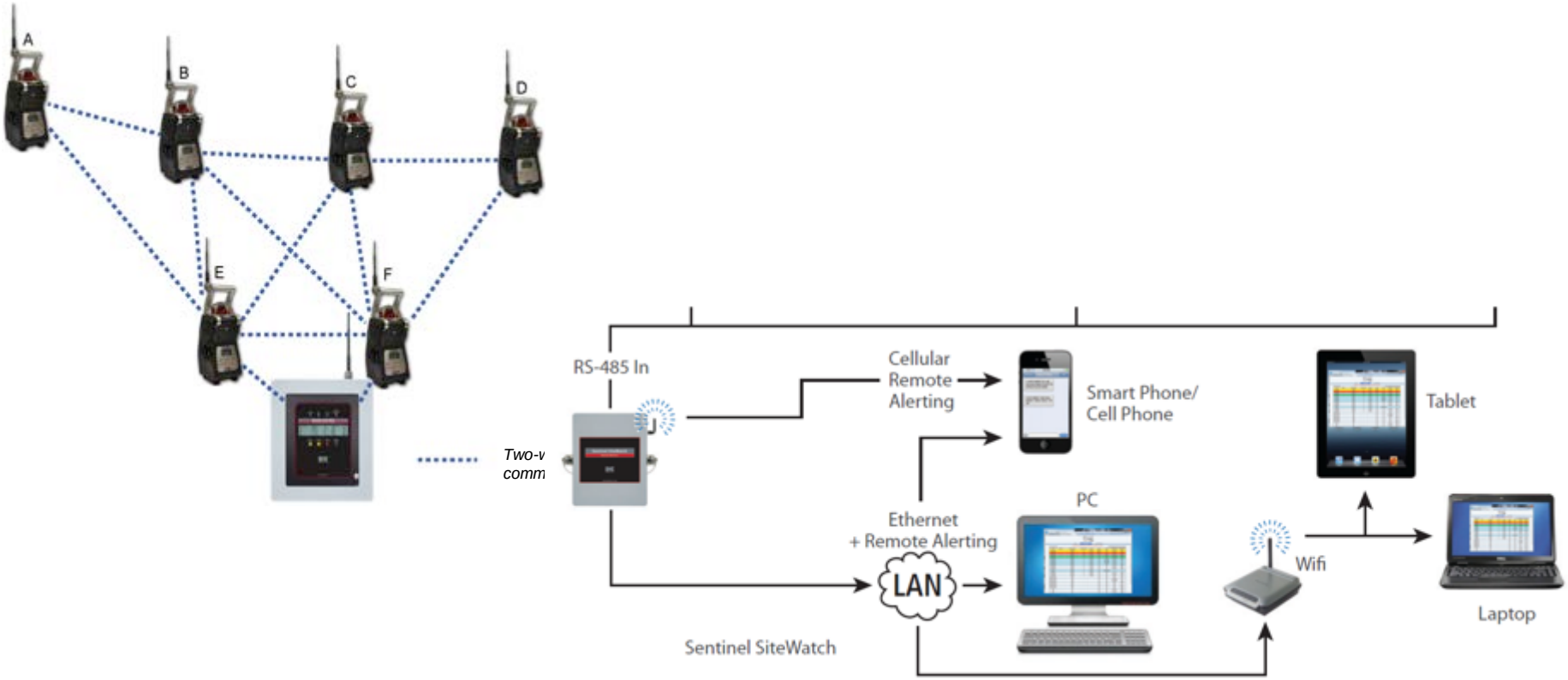




- When in Controller Mode, set the address between 1 and 30.
- When in BM 25 Mode, the address is not used since there is no Master/Slave relationship

Only nodes that share the same RF Channel (from 0 to 15) can communicate together.

BM25 Network Settings



When in Controller Mode, BM 25s send data to the X40. As soon as one BM 25 fires an alarm, the X40 relays the information to all BM 25s on the same network that then turn in Alarm Transfer mode.

When used in combination with Sentinel Site Watch, you now get automated emails on alarm and fault conditions.

BM25

BM25 features remain unchanged, except:

- **Power Source/Run Time:**

  Nickel-Metal Hydride/Up to 135 hours

- **Certifications:**

BM25W	**BM25AW**
IECEx & ATEX	CSA
II 1 G (Ex IIB) / I M1 (w/o IR module)	Class I, Div 1, Gr ABCD
II 2 G (Ex IIC) / I M2 (with IR module)	

Video

https://www.youtube.com/watch?v=XC1J73KbQZI

(internet connection required)

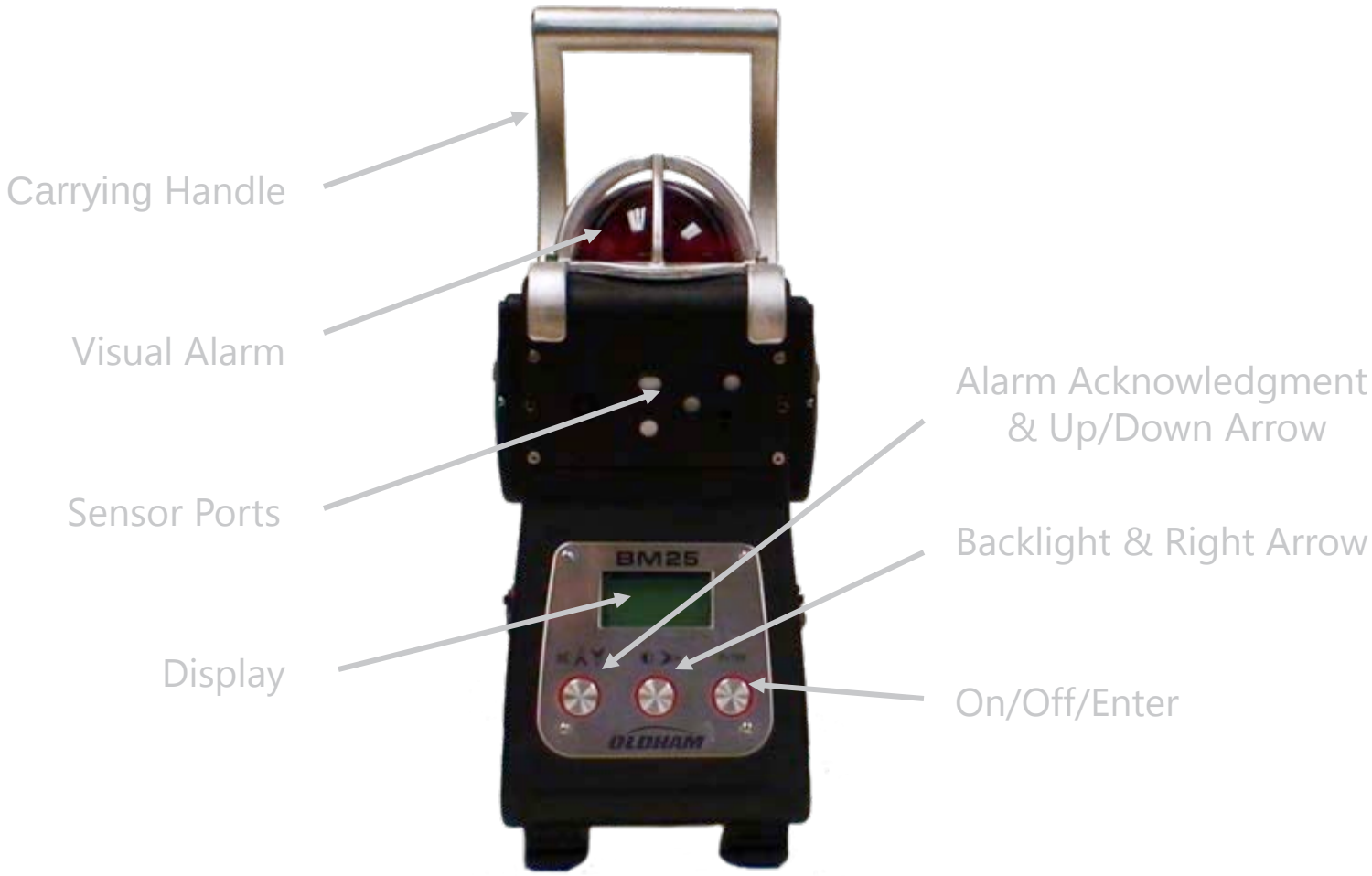
BM25

Operations

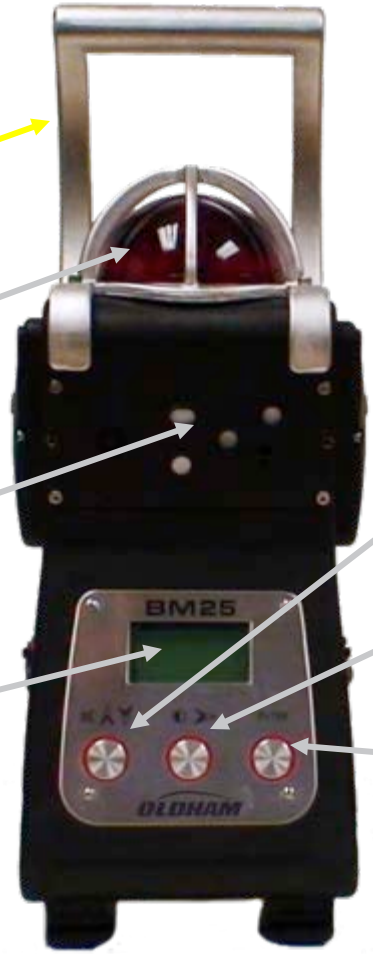
Module 3

Back

BM25 External Features



BM25 External Features



Carrying Handle

Visual Alarm

Sensor Ports

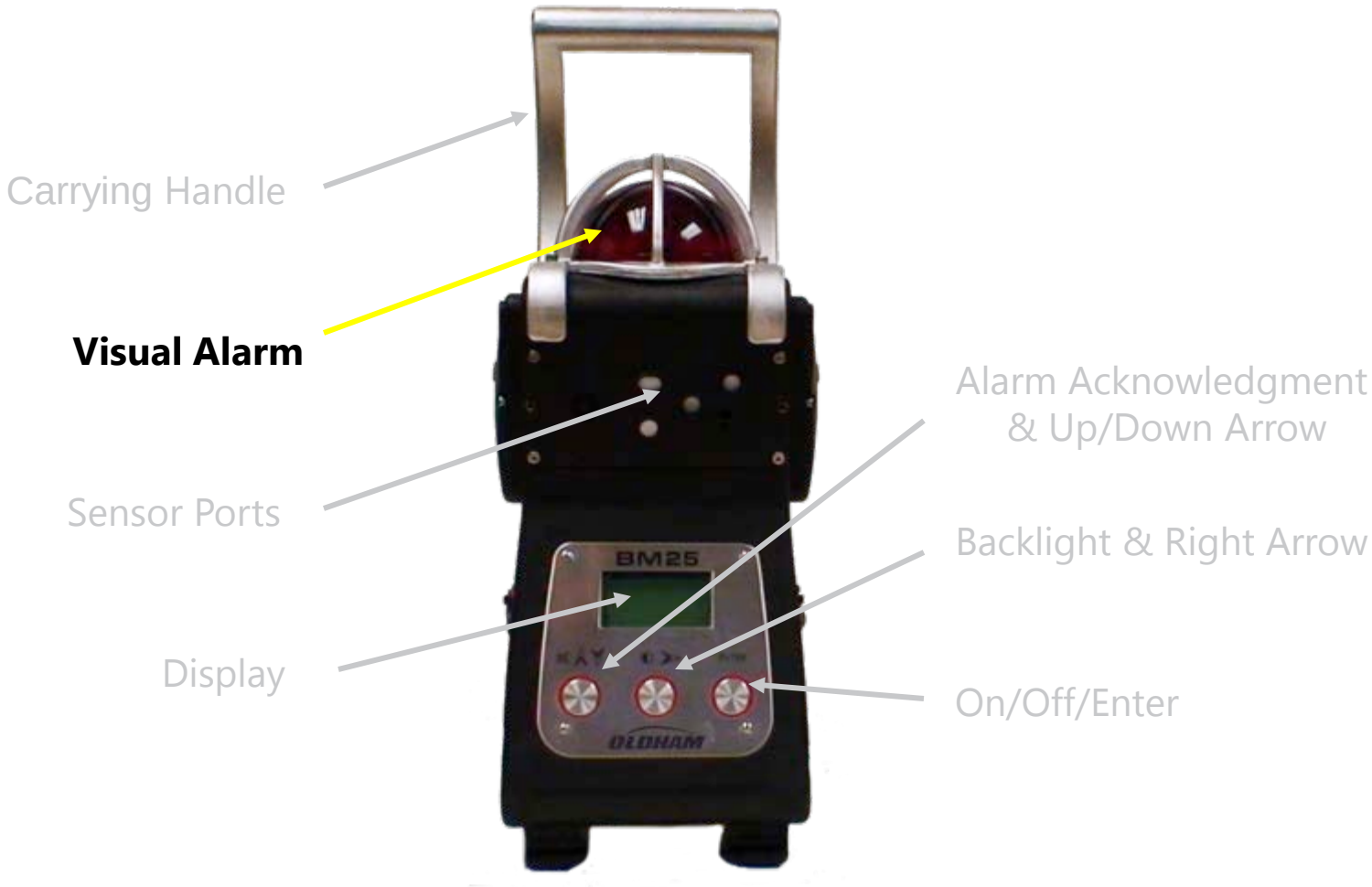
Display

Alarm Acknowledgment & Up/Down Arrow

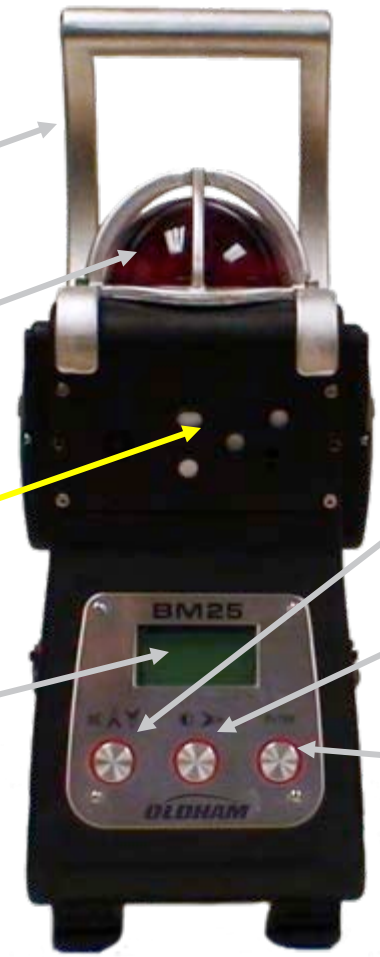
Backlight & Right Arrow

On/Off/Enter

BM25 External Features



BM25 External Features



Carrying Handle

Visual Alarm

Sensor Ports

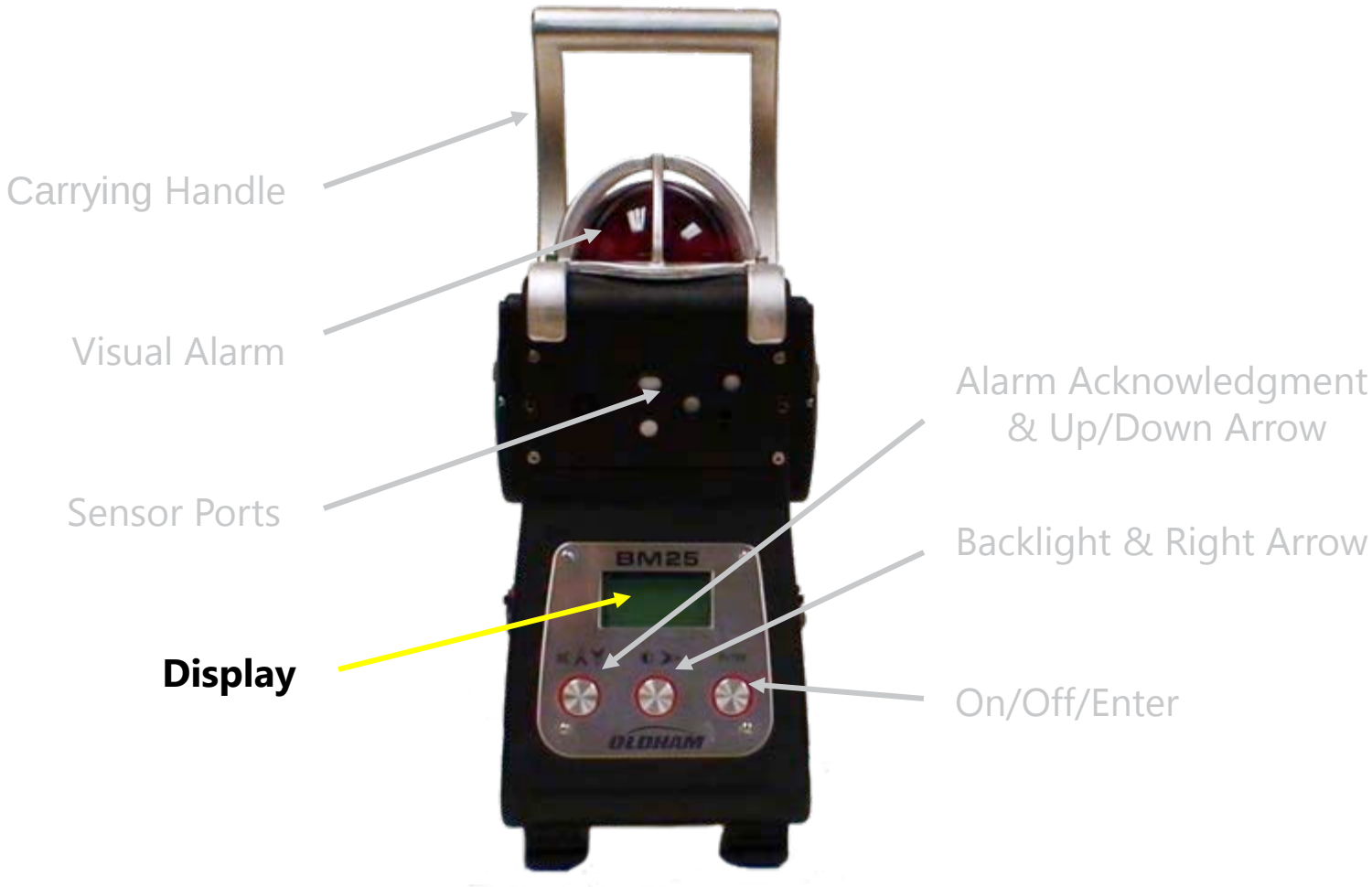
Display

Alarm Acknowledgment & Up/Down Arrow

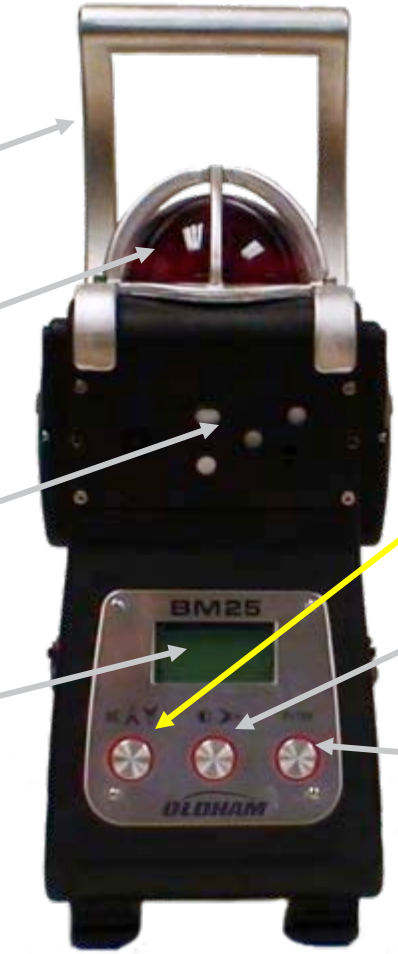
Backlight & Right Arrow

On/Off/Enter

BM25 External Features



BM25 External Features



Carrying Handle

Visual Alarm

Sensor Ports

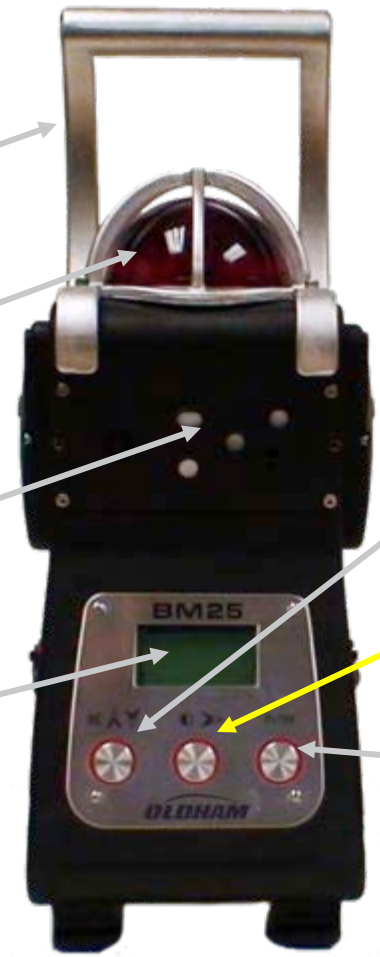
Display

Alarm Acknowledgment & Up/Down Arrow

Backlight & Right Arrow

On/Off/Enter

BM25 External Features



Carrying Handle

Visual Alarm

Sensor Ports

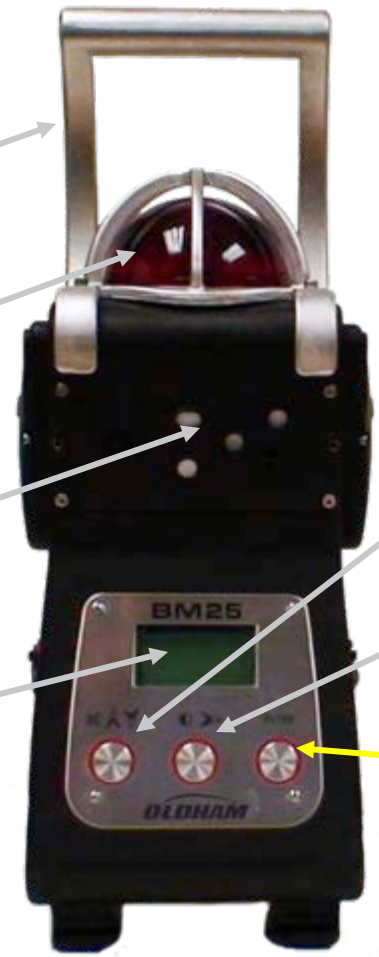
Display

Alarm Acknowledgment & Up/Down Arrow

Backlight & Right Arrow

On/Off/Enter

BM25 External Features



Carrying Handle

Visual Alarm

Sensor Ports

Display

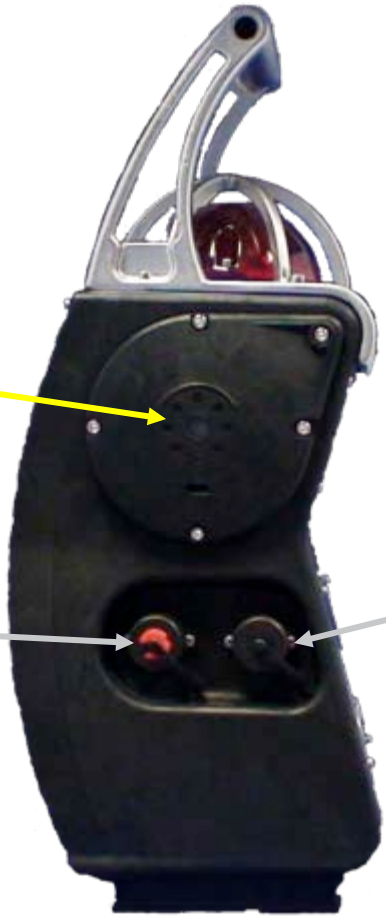
Alarm Acknowledgment & Up/Down Arrow

Backlight & Right Arrow

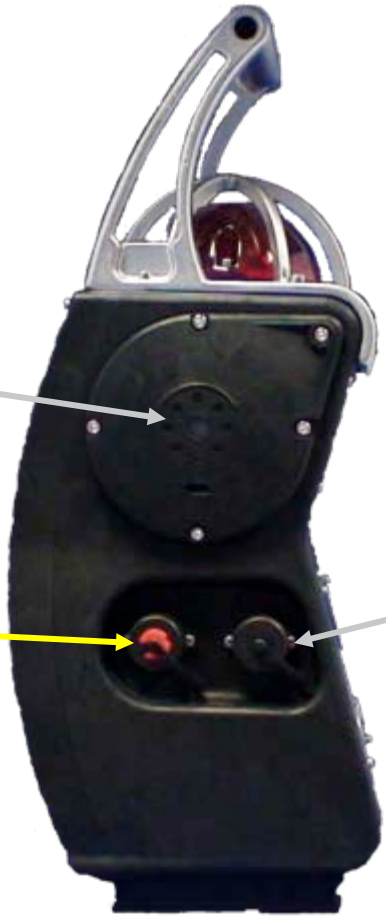
On/Off/Enter

BM25 External Features

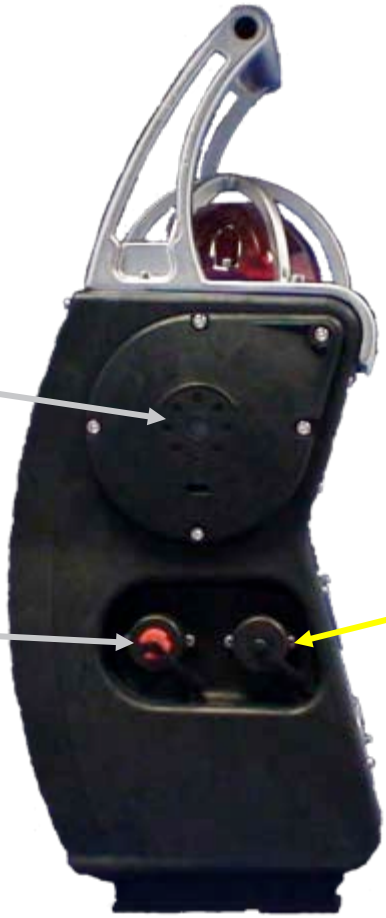
BM25 External Features



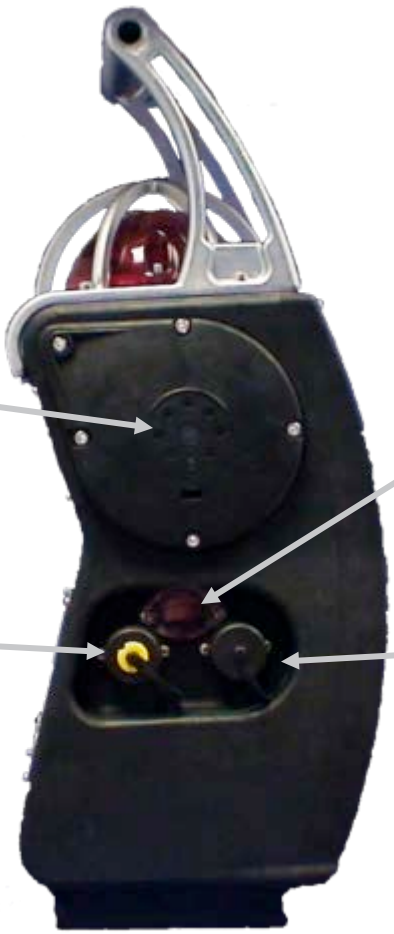
BM25 External Features



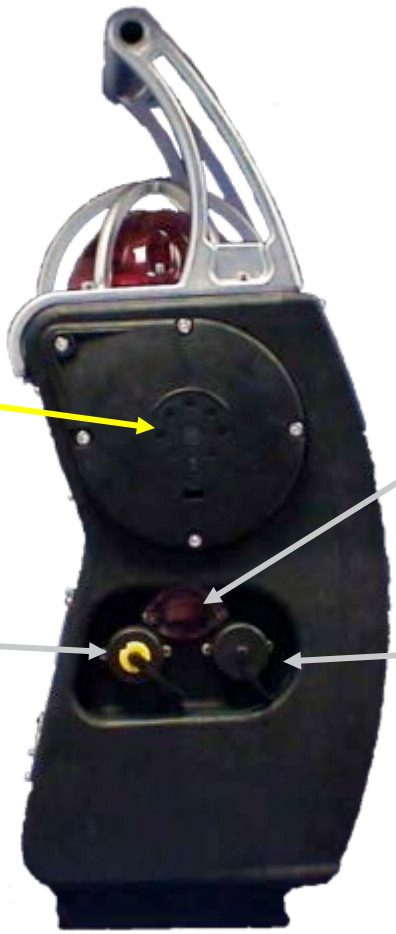
BM25 External Features



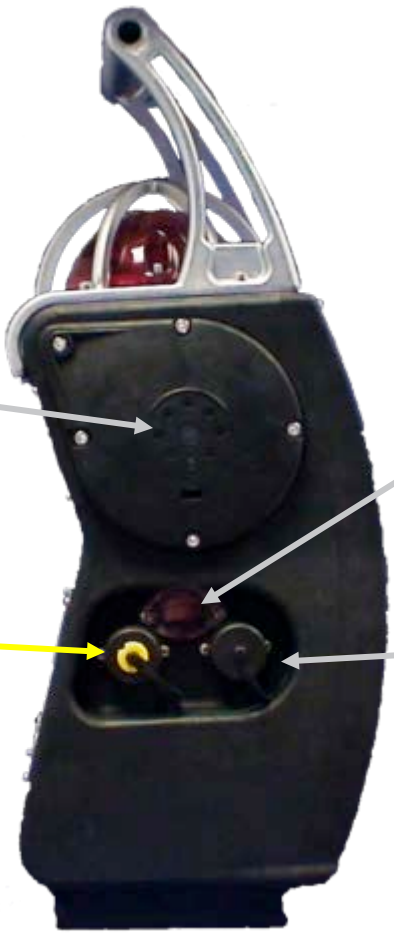
BM25 External Features



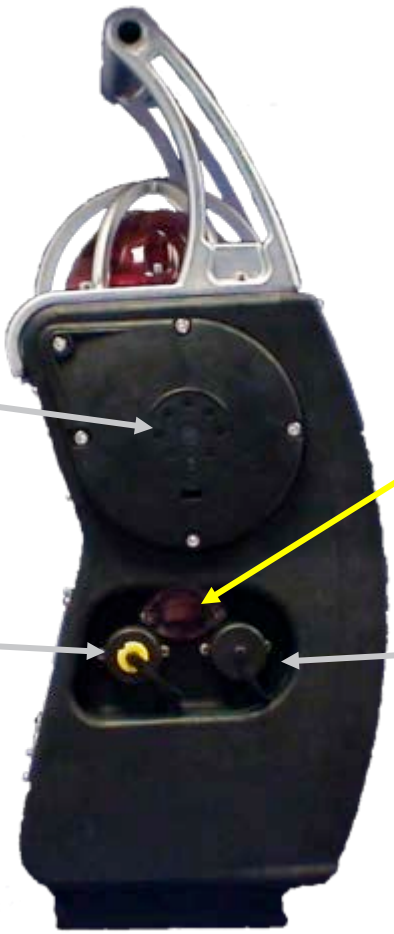
BM25 External Features



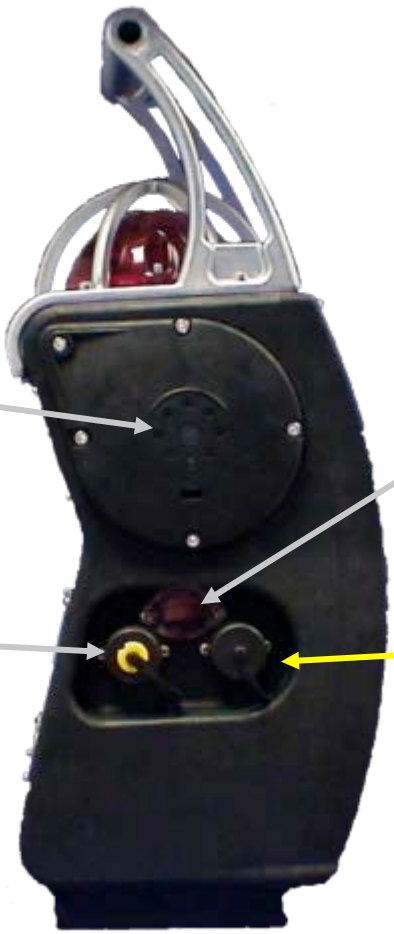
BM25 External Features



BM25 External Features



BM25 External Features



Turning On the BM25

Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Turning On the BM25

Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Manufacture's Name

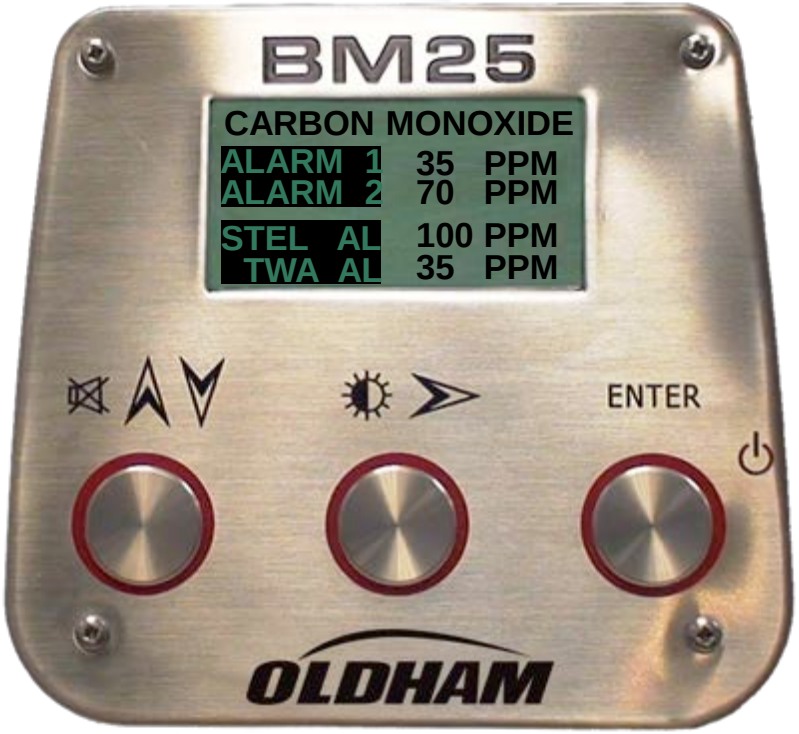
Turning On the BM25

Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Manufacture's Name

Date Code and BM25 Serial Number.

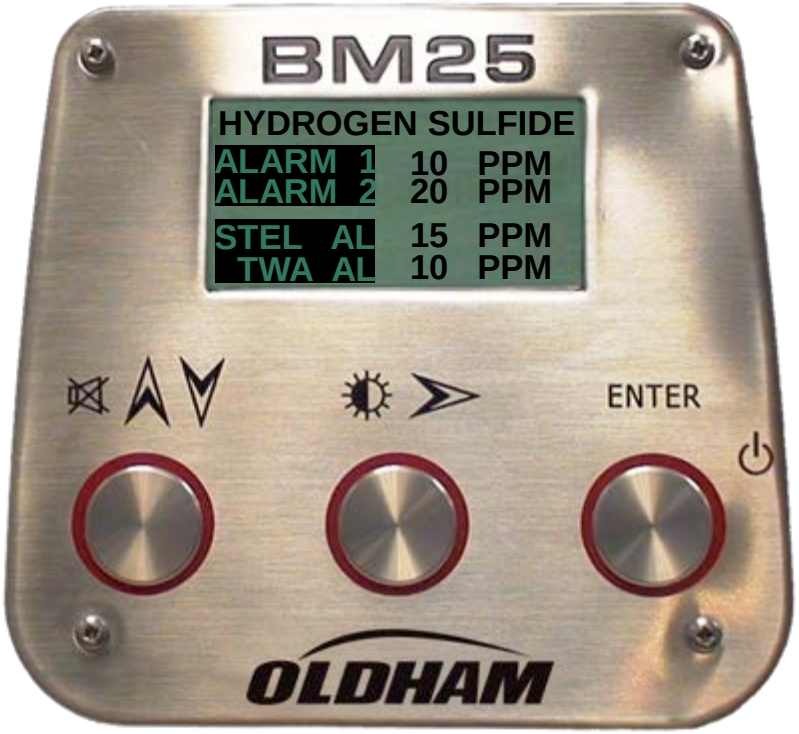
Turning On the BM25



Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Carbon Monoxide Alarm Settings.

Turning On the BM25



Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Carbon Monoxide Alarm Settings.

Hydrogen Sulfide Alarm Settings.

Turning On the BM25

Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Oxygen Alarm Settings.

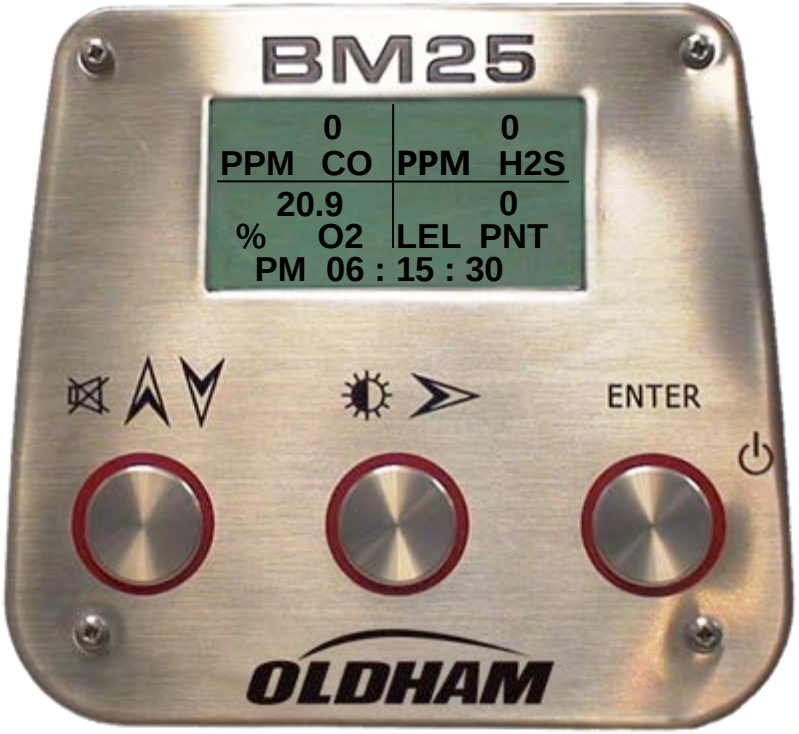
Turning On the BM25

Press and hold the On/Off Enter button until the backlight illuminates and the following screens will appear:

Oxygen Alarm Settings.

LEL Sensor Alarm Settings.

Real-Time Operation Screen



Real-Time Operation Screen

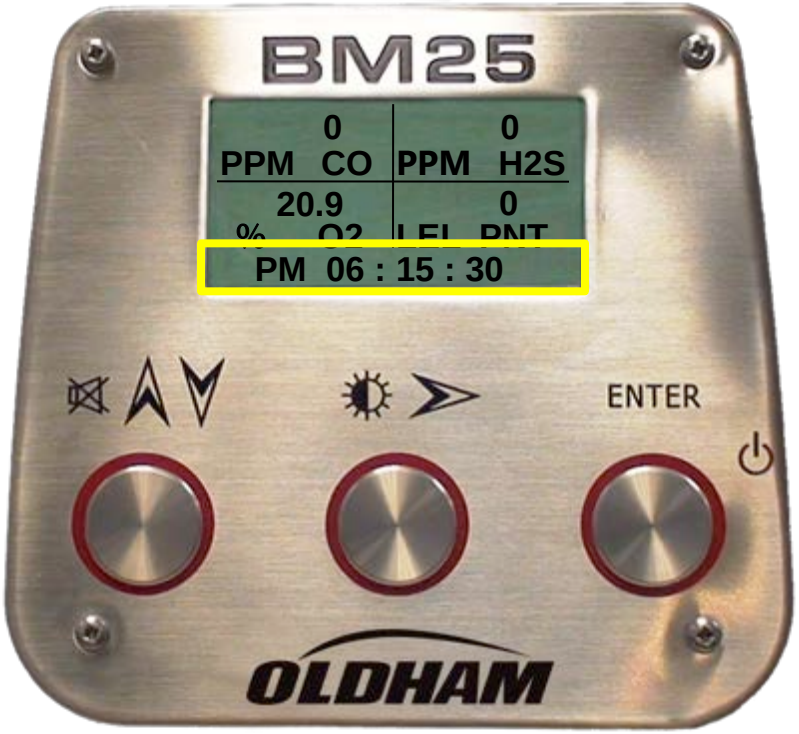
Sensors Installed

Real-Time Operation Screen

Sensors Installed

Gas Readings

Real-Time Operation Screen

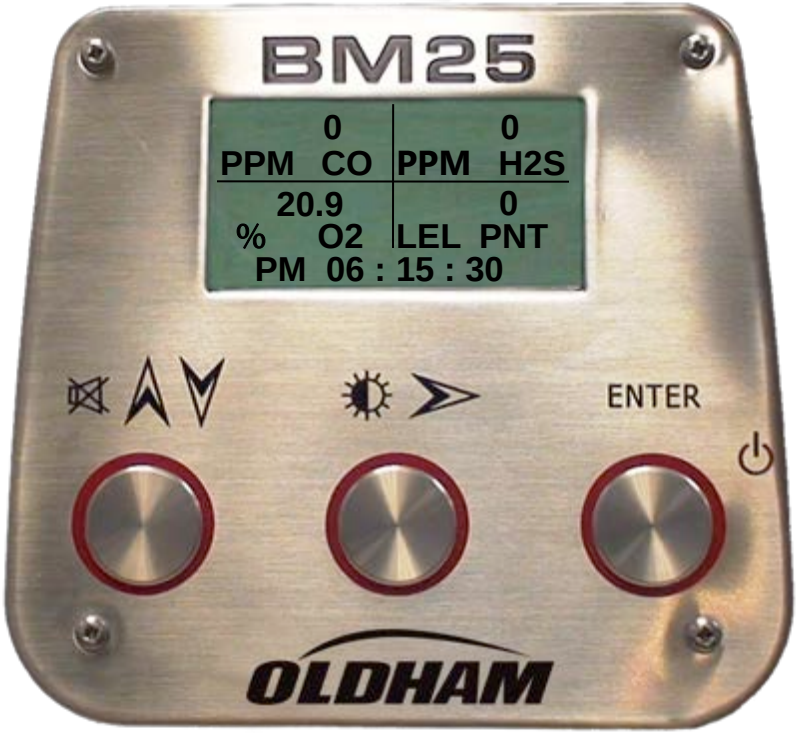


Sensors Installed

Gas Readings

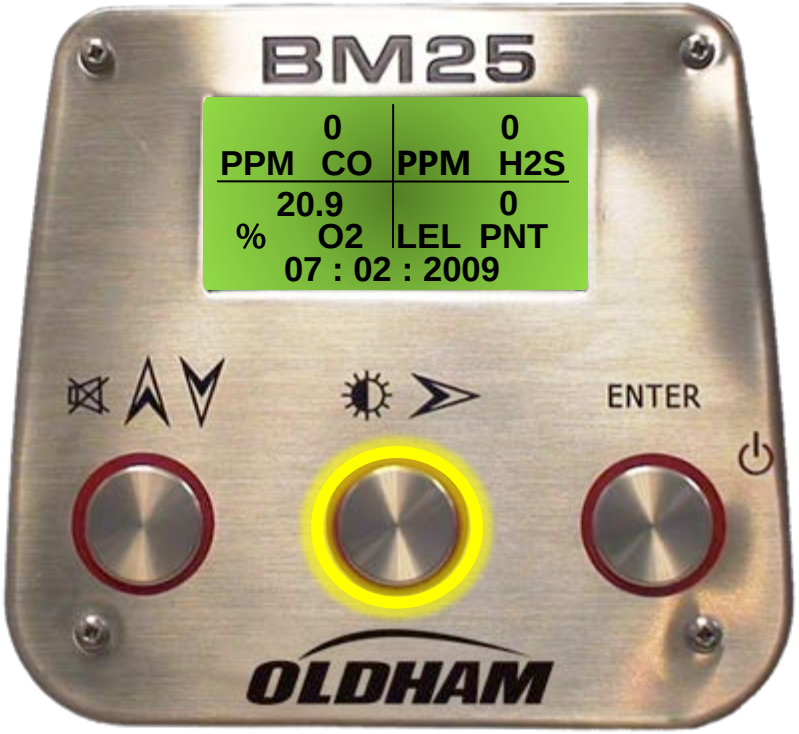
Current Time

Real-Time Operation Screen



Backlight Operations - The BM25 has a user selectable backlight that upon activation will illuminate the display for 4 minutes and displays the current date.

Real-Time Operation Screen

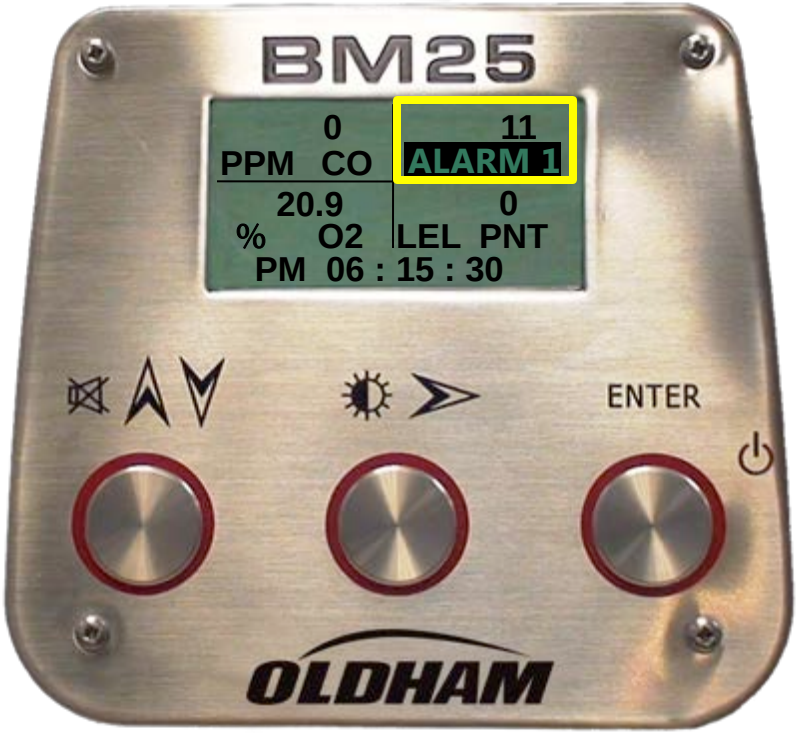


Backlight Operations - The BM25 has a user selectable backlight that upon activation will illuminate the display for 4 minutes and displays the current date.

Pressing the will activate the backlight.

BM25 Low Alarm

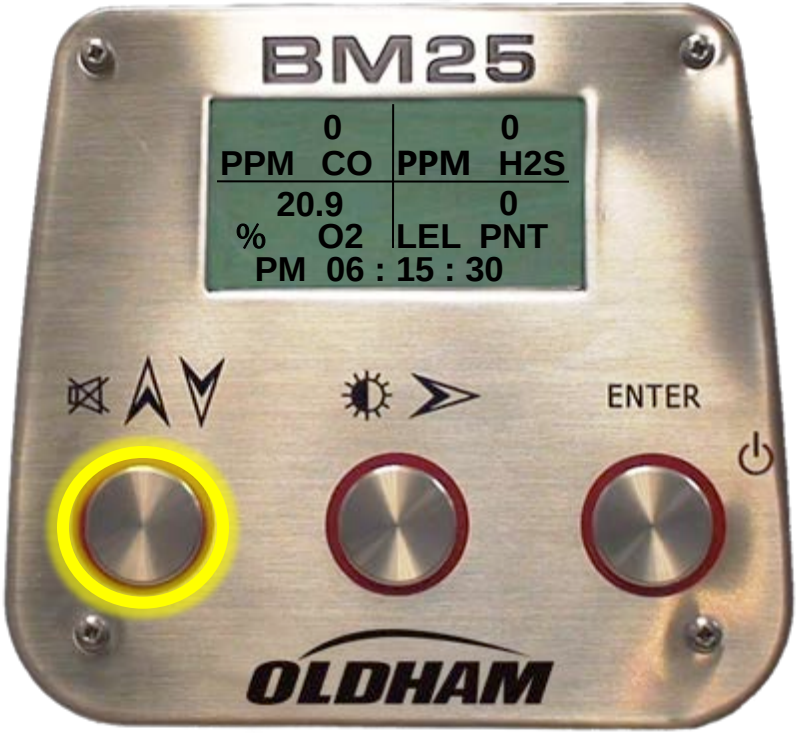
Real-Time Operation Screen



Low Alarm Condition – When any one sensor goes into a low alarm condition, the visual alarm strobe will flash once a second and the audible will produce a two tone sound. The display will toggle between the alarm condition and the sensor type.

BM25 Low Alarm

Real-Time Operation Screen

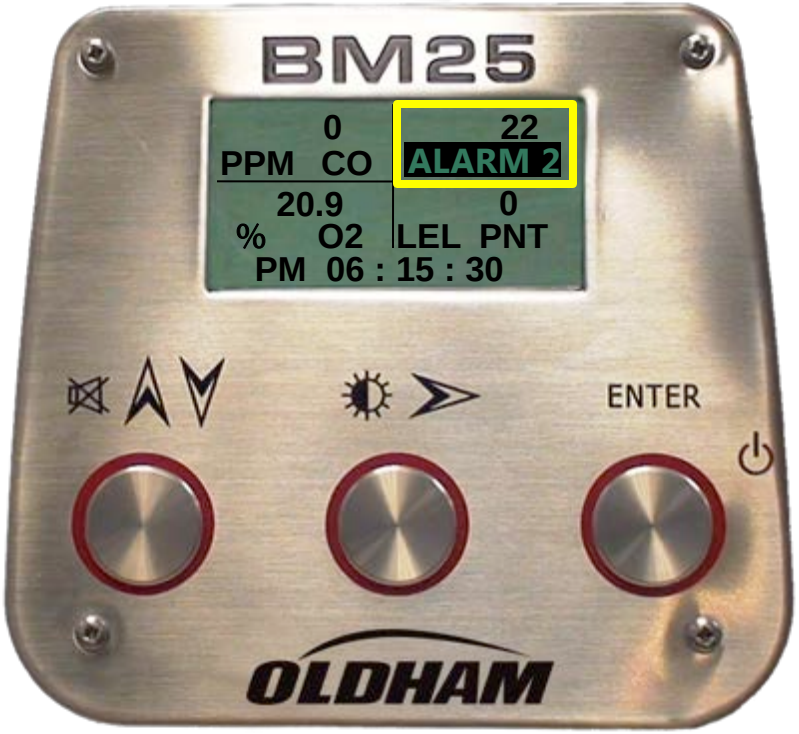


Low Alarm Condition – Because the BM25 has latching alarms(*), the user must press the to clear the alarm condition.

(*) Default settings from factory. Configurable.

BM25 High Alarm

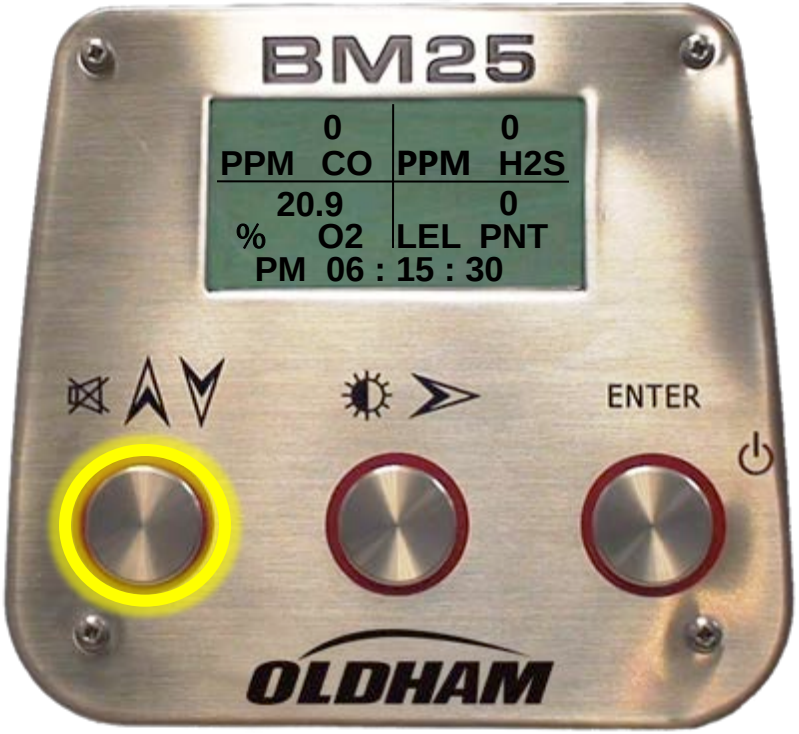
Real-Time Operation Screen



High Alarm Condition – When any one sensor goes into a high alarm condition, the visual alarm will continuously strobe and the audible will produce a fast two tone sound. The display will toggle between the alarm condition and the sensor type.

BM25 Clearing Alarm

Real-Time Operation Screen



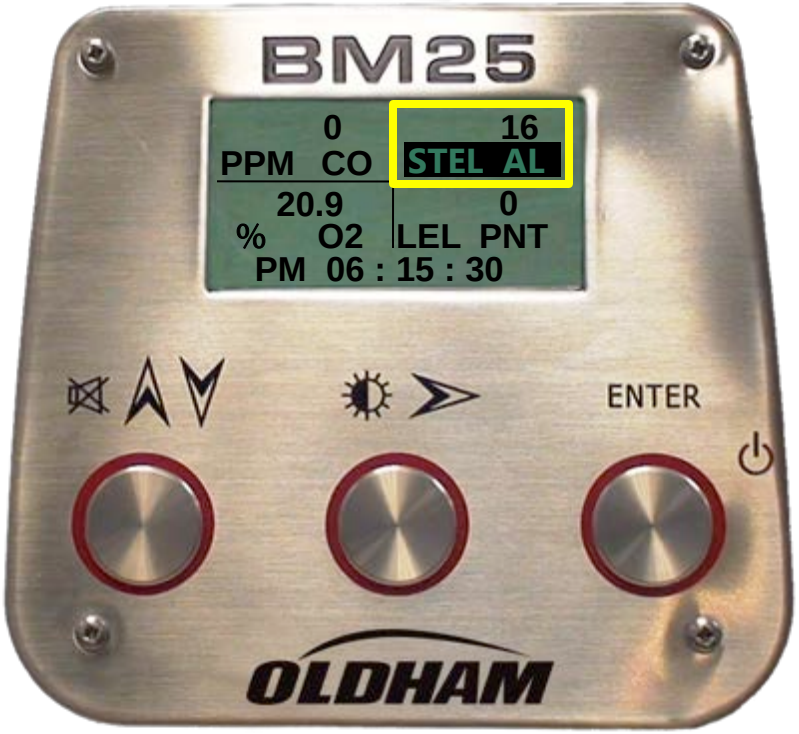
Clearing Alarm Condition – Because the BM25 has latching alarms, the user must press the to clear the alarm condition.

BM25 Low Alarm Video

BM25 High Alarm Video

BM25 STEL Alarm

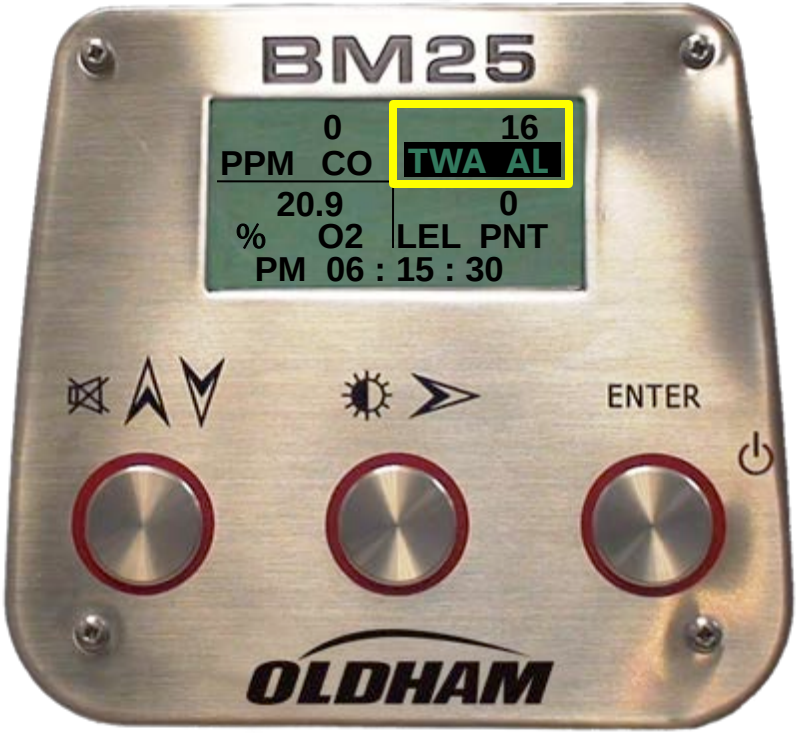
Real-Time Operation Screen



STEL Alarm Condition – When any one sensor goes into a STEL alarm condition, the visual alarm will continuously strobe and the audible will produce a fast two tone sound. The display will toggle between the alarm condition and the sensor type. This alarm cannot be cleared.

BM25 TWA Alarm

Real-Time Operation Screen



TWA Alarm Condition – When any one sensor goes into a TWA alarm condition, the visual alarm will continuously strobe and the audible will produce a fast two tone sound. The display will toggle between the alarm condition and the sensor type. This alarm cannot be cleared.

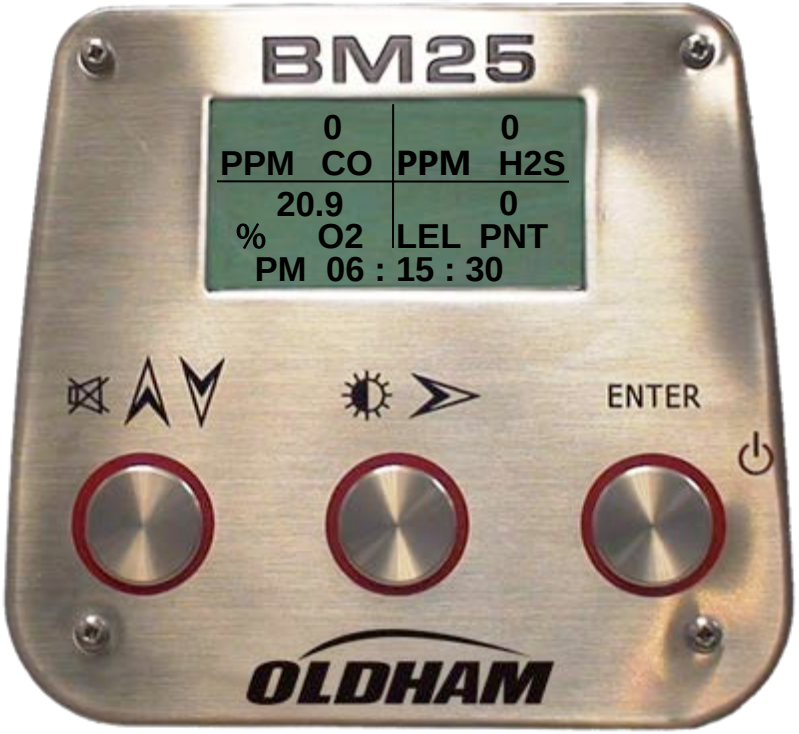
Functional Bump Test

Oldham designs, manufactures and sells instrumentation for the preservation of human life and property. Recognizing this fact, it is recommended that the user send the instrument through a Bump Test to verify sensor and alarm operations prior to each days use. If the BM25 fails the Bump Test, a full calibration should be performed prior to use.

BM25 Bump Test Video

BM25 Flipping Display

Real-Time Operation Screen



Flipping the Display - The user has the ability to flip the display upside down depending on angle of view.

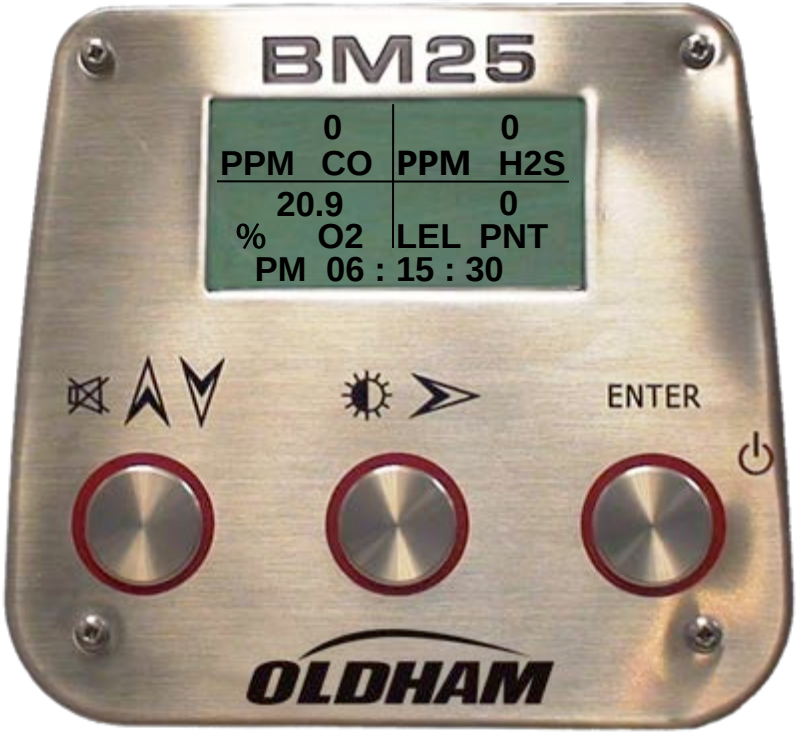
BM25 Flipping Display

Real-Time Operation Screen

Flipping the Display - The user has the ability to flip the display upside depending on angle of view.

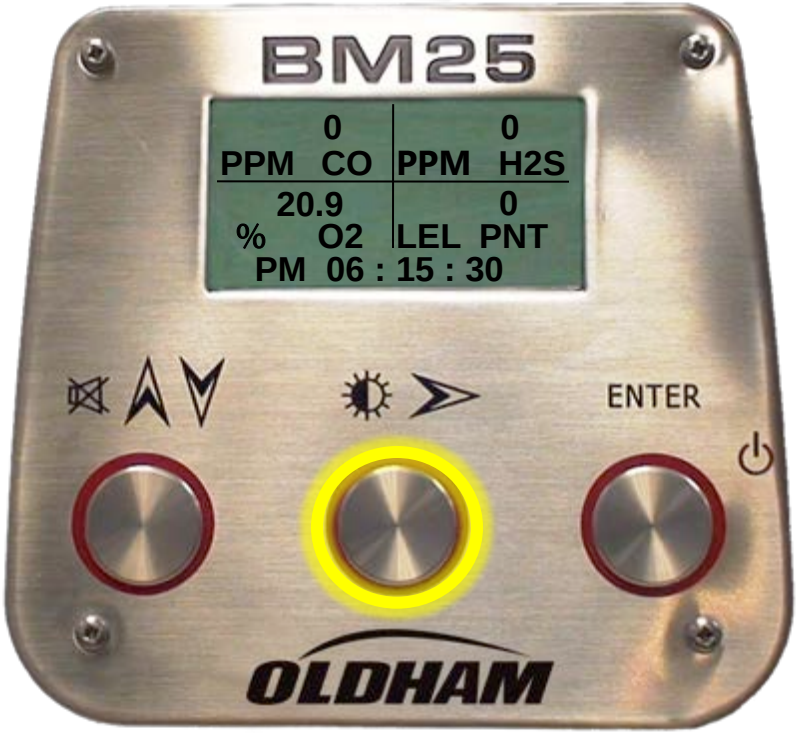
Pressing and holding the ⊠ ∧ ∨ for three seconds will flip the display.

Other Operation Screens



The BM25 has seven other operations screens that can be viewed by the user.

Other Operation Screens



The BM25 has seven other operations screens that can be viewed by the user.

Pressing the ☀ ≫ will provide the user with the following screen.

BM25 Select Location

Other Operation Screens

Select Location – Through this screen the user can set either the BM25's location or user.

BM25 Select Location

Other Operation Screens

Select Location – Through this screen the user can set either the BM25's location or user.

Pressing On/Off Enter button allows the user to select a name from a pre-programmed list.

BM25 Select Location

Other Operation Screens

Select Location – Through this screen the user can set the BM25 to a location or user.

A name can now be highlighted by pressing ✸ ≻ or ⊠ ∧ ∨.

BM25 Select Location

Other Operation Screens

Select Location – Through this screen the user can set the BM25 to a location or user.

A name can now be highlighted by pressing or .

Press the On/Off Enter button to select.

BM25 Select Location

Other Operation Screens

Pressing the will provide the user with the following screen.

BM25 Battery Runtime

Other Operation Screens

Pressing the will provide the user with the following screen.

Remaining Autonomy – This will display to the user the amount of battery runtime left. The BM25 can operate up to 170 hours on a full charge (non-alarming).

Other Operation Screens

Pressing the will provide the user with the following screen.

BM25 Minimum Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

Minimum Readings – This will display the minimum readings since last time the unit was turned off. The display will toggle between the word Min and the sensor type.

BM25 Minimum Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

BM25 Maximum Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

Maximum Readings – This will display the maximum readings since last time the unit was turned off. The display will toggle between the word Max and the sensor type.

To reset min. and max. readings, press and or turn the unit off.

BM25 Maximum Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

BM25 STEL Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

STEL – This screen will display the Short Term Exposure limits. This is the average reading over the last 15 minutes.

BM25 STEL Readings

Other Operation Screens

Pressing the will provide the user with the following screen.

BM25 TWA Readings

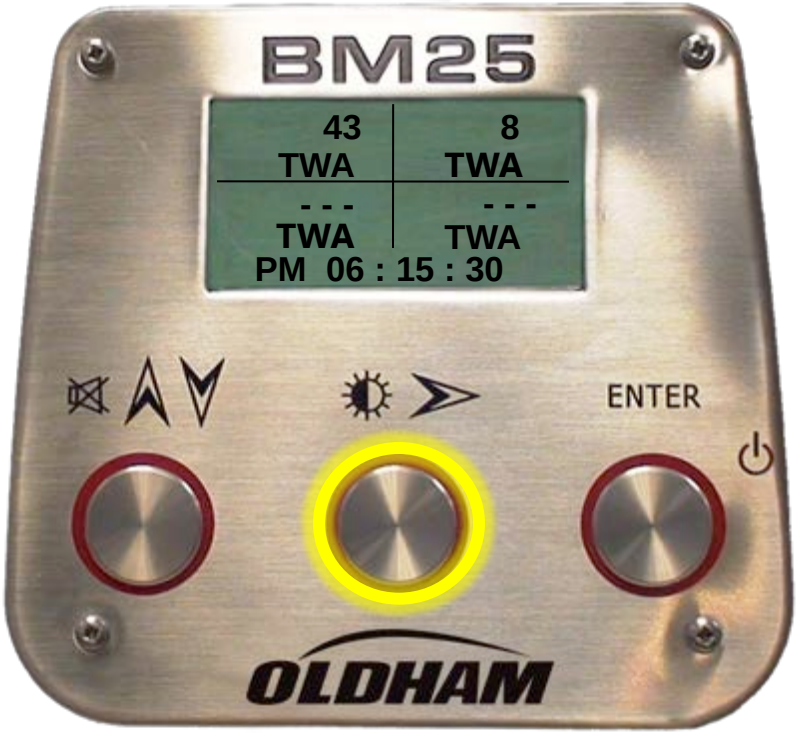
Other Operation Screens

Pressing the will provide the user with the following screen.

TWA Readings – This will display the TWA readings since last time the unit was turned off. The display will toggle between the word TWA and the sensor type.

BM25 TWA Readings

Other Operation Screens



Pressing the will provide the user with the following screen.

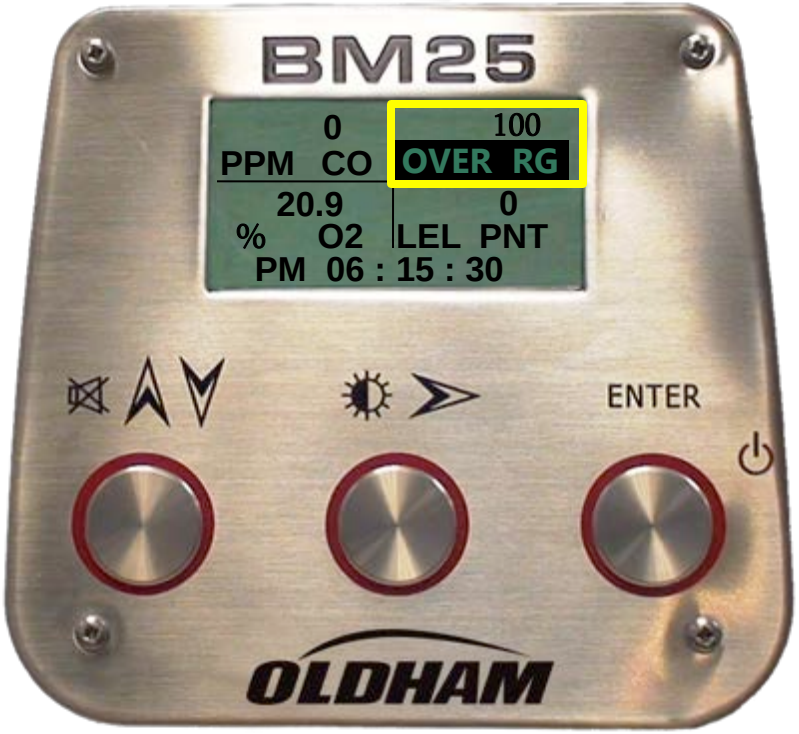
BM25 Maintenance Code

Other Operation Screens

Pressing the will provide the user with the following screen.

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

Sensor Over Range



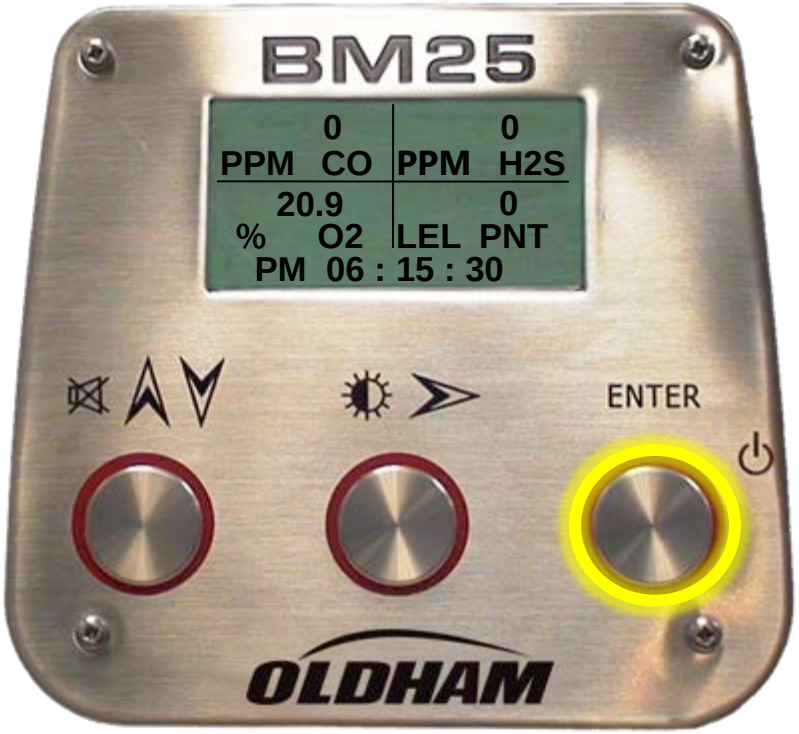
If a sensor is exposed to a gas concentration higher than its measuring range, the BM25 display will toggle between OVER RG and sensor type. On toxic and oxygen sensors, this condition will clear automatically once the gas concentration returns back within it's measuring range.

Sensor Over Range

If the LEL sensor exceeds 100% LEL, OVER RG will be locked on the display and the sensor will power down. This is designed to protect the sensor from unnecessary stress caused by high combustible gas concentrations. This condition can be cleared by turning the unit off and then back on again.

BM25 Turning Off

Real-Time Operation Screen



To turn off the BM25, press and hold the On/Off Enter button.

BM25 Turning Off

Real-Time Operation Screen

To turn off the BM25, press and hold the On/Off Enter button.

Continue to hold the On/Off Enter button through the 3 second countdown.

BM25 Turning Off

Real-Time Operation Screen

To turn off the BM25, press and hold the On/Off Enter button.

Continue to hold the On/Off Enter button through the 3 second countdown.

Now press and release the On/Off Enter button to power down the BM25.

Confidence Flash

The BM25 will emit a confidence flash every 5 minutes to let the user know that the unit is functioning. In addition, this can also give the user a visual indication of the BM25 location in dark environments.

Sampling Pump Version

If the BM25 was purchased with the sample draw pump built-in, the BM25 will have the ability to draw a sample of up to 100 feet. With this option, the BM25 can continuously draw a sample from a confined space or from a remote location.

BM25 Sampling Pump Video

2 & 2 Rule

Sampling Pump Operations

To insure proper sampling time, always adhere to the 2 and 2 sampling rule:

2 & 2 Sampling Rule

2 seconds per foot of tubing
2 minutes of sample time per location

Example: 20 feet of tubing sample draw time would be?

2 & 2 Rule

Sampling Pump Operations

To insure proper sampling time, always adhere to the 2 and 2 sampling rule:

2 & 2 Sampling Rule

2 seconds per foot of tubing
2 minutes of sample time per location

Example: 20 feet of tubing sample draw time would be?

2 minutes and 40 seconds

Charging the BM25 (Non-Intrinsically Safe)

To charge the BM25, simply connect the charger receptacle into the left rear receptacle on the BM25. This will power down the unit and will automatically and start the charging. The BM25 will be fully charged in approximately 4 hours. This should only be performed in non-hazardous locations!

Local charger port is marked with a red ring

BM25 Charging Non-IS Video

Charging the BM25 (Non-Intrinsically Safe)

Charging the BM25 will display the following:

Charging the BM25 (Non-Intrinsically Safe)

Charging the BM25 will display the following:

Battery charging indicator.

Charging the BM25 (Non-Intrinsically Safe)

Charging the BM25 will display the following:

Battery charging indicator.

How long the battery has been charging.

Charging the BM25 (Non-Intrinsically Safe)

Charging the BM25 will display the following:

Battery charging indicator.

How long the battery has been charging.

Charge type.

Charging the BM25 (Non-Intrinsically Safe)

When the battery can no longer supply sufficient power to properly operate the BM25, the words “Low batt. level” will appear on the display and the unit will be in continuous alarm. At this point the battery life is 20 minutes and the BM25 should be recharged.

Charging the BM25 (Intrinsically Safe)

The BM25 can be connected with an intrinsically safe power supply allowing for continuous operation in hazardous locations. Should the unit go into alarm, the power supply will shutoff and alarms will be powered by the BM25. Therefore the BM25 will operate almost indefinitely in the absence of an alarm condition.

Charging the BM25 (Intrinsically Safe)

To connect, first plug-in the intrinsically safe power supply (non-hazardous location).

Charging the BM25 (Intrinsically Safe)

To connect, first plug-in the intrinsically safe power supply (non-hazardous location).

Connect the approved cable from the intrinsically safe charger to the front left receptacle on the BM25.

Charging the BM25 (Intrinsically Safe)

To connect, first plug-in the intrinsically safe power supply (non-hazardous location).

Connect the approved cable from the intrinsically safe charger to the front left receptacle on the BM25.

The BM25 will now continue to operate continuously and safely in a hazardous location.

Charging IS Video

Alarm Transfer

If desired, the user can connect an unlimited amount of units together. With this setup, the BM25 can transfer an alarm condition to other units that are connected. This application is useful in hole watch operations or perimeter monitoring.

Alarm Transfer

To interconnect the BM25s, connect the cable from the front right receptacle of the first unit.

Alarm Transfer

To interconnect the BM25s, connect the cable from the front right receptacle of the first unit.

Now connect the same cable to the rear right receptacle of the next unit.

Alarm Transfer

To interconnect the BM25s, connect the cable from the front right receptacle of the first unit.

Now connect the same cable to the rear right receptacle of the next unit.

When the first unit goes into alarm, it will send the alarm down stream to the next BM25.

Alarm Transfer

Hooking an additional transfer cable from the last BM25 to the first will allow any BM25 that goes into alarm to trigger all connected units. This would work best for perimeter monitoring.

- Wired alarm transfer functionality is still available on BM25 Wireless for connection of a manual call point or to report wirelessly of an alarm from a non-wireless BM25.

Tripod Application

To elevate the BM25, a tripod can be snapped into the bottom of the unit elevating it three feet off the ground. This will provide stability and better user visibility of the BM25.

Back

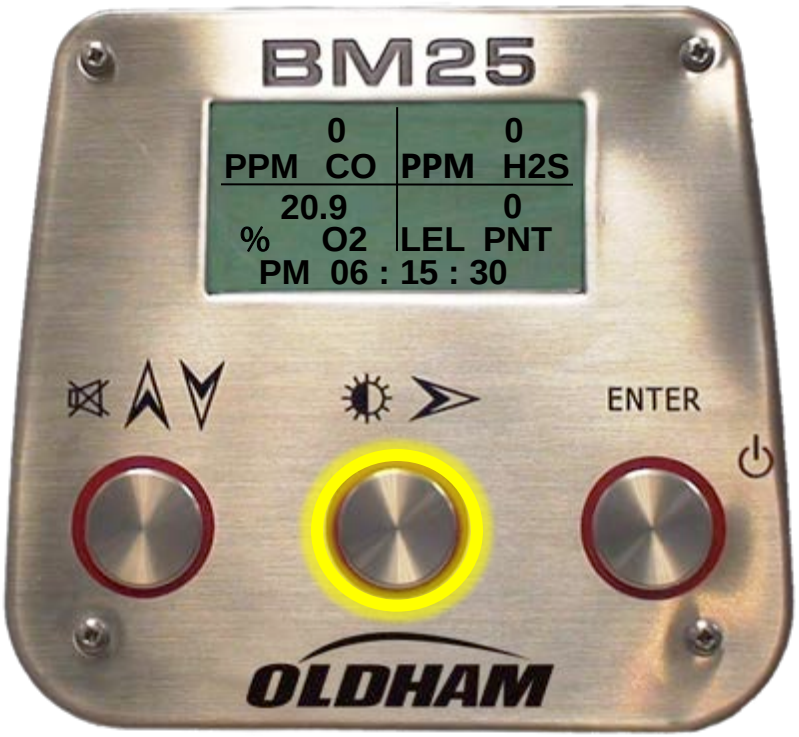
BM25
Calibration
Module 4

Back

Calibration Policy

Gas detection instruments are life-saving devices. Recognizing this fact, Oldham recommends that a full calibration be performed using certified concentration(s) of Oldham calibration gas(es) monthly to ensure maximum accuracy.

BM25 Calibration



From the real-time operation screen, press the ☀ ≫ multiple times until you arrive at the Enter Maintenance Code screen.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the BM25's calibration and setup by typing in the correct code.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

The code for the BM25 will be defaulted from the factory to the number 18.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

To type in the code, press the ☀ ➢ two times to underline the third number column.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

Press the once to scroll to the number one.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

Press the once to scroll to the number one.

Press the to advance to the last column.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

Press the multiple times to scroll to the number eight.

BM25 Code Entry

Enter Maintenance Code – Through this option the user can access the maintenance and setup portion by typing in the correct code.

Press the On/Off Enter button to enter the code.

BM25 Accessing Calibration

Through this configuration mode, the user can access the calibrate option.

To access, press the button to highlight calibrate.

Pressing the On/Off Enter button will put the user into the calibration mode.

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

- Calibration gas concentration must be between 15% and 100% of the sensor range.

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

250 ppm CO

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

250 ppm CO

25% LEL Pentane or 50% LEL Methane

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

250 ppm CO

25% LEL Pentane or 50% LEL Methane

25 ppm or 50 ppm H_2S

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

0.5 LPM or 1.0 LPM Regulator

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

0.5 LPM or 1.0 LPM Regulator

Calibration Adaptor

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

0.5 LPM or 1.0 LPM Regulator

Calibration Adaptor

Consult Technical Service for other calibration gas types.

BM25 Calibration Supplies

Before calibration, the user needs to ensure that all necessary calibration supplies are available.

Do not use a multi-gas cylinder for calibration of the BM25. The cross interference of CO to the H_2S sensor will cause the sensor calibration to fail.

BM25 Calibration

All available sensors will be on the display for calibration.

BM25 Calibration

All available sensors will be on the display for calibration.

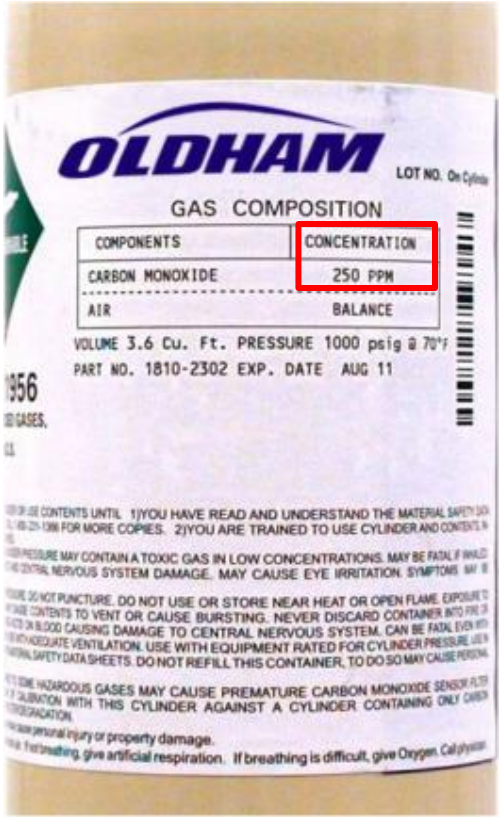
Pressing the On/Off Enter button will select the highlighted sensor for calibration.

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

Calibration gas concentration must be between 15% and 100% of the sensor range.

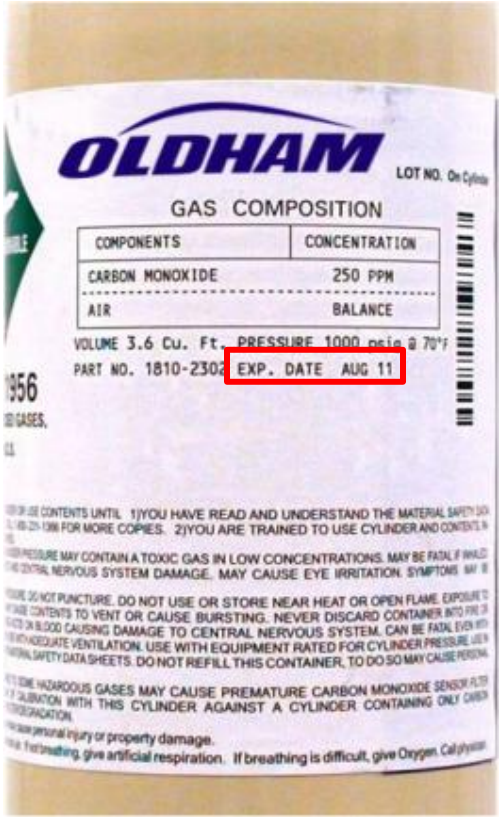
BM25 Calibration Cylinder



At this screen, type in the gas concentration of your cylinder.

This concentration level can be found on the cylinder under Concentration.

BM25 Calibration Cylinder



At this screen, type in the gas concentration of your cylinder.

This concentration level can be found on the cylinder under Concentration.

Never use expired gas!

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

If the Cal Gas value needs changed, press the to underline the second column in.

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

If the Cal Gas value needs changed, press the to underline the second column in.

Press the to scroll to the proper value.

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

If necessary, press the to underline the next column.

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

If necessary, press the to underline the next column.

Press the to scroll to the proper value.

BM25 Calibration

At this screen, type in the gas concentration of your cylinder.

If necessary, press the to underline the next column.

Press the to scroll to the proper value.

Pressing the On/Off Enter button to accept.

BM25 Calibration

Before a sensor receives its calibration, it must be zeroed. This will set the sensor to a zero reference based on the current environment that the unit is in. This zero and calibration should only be done in clean air. If unsure of the quality of air, use a cylinder of Zero Grade Air during the zeroing process.

BM25 Calibration

Press the On/Off Enter button to accept the zero.

BM25 Calibration

Press the On/Off Enter button to accept the zero.

At this point secure the calibration adaptor to the BM25.

BM25 Calibration

Press the On/Off Enter button to accept the zero.

To secure the calibration adaptor to the BM25 tighten the two threaded fittings on the adaptor.

BM25 Calibration

Press the On/Off Enter button to accept the zero.

To secure the calibration adaptor to the BM25 tighten the two threaded fittings on the adaptor.

Apply the appropriate calibration gas for two minutes.

BM25 Calibration with Pump

Press the On/Off Enter button to accept the zero.

To secure the calibration adaptor to the BM25 tighten the two threaded fittings on the adaptor.

If the BM25 has a built-in sample draw pump, then use a demand flow regulator.

BM25 Calibration

After two minutes and the reading has stabilized, Press the On/Off Enter button to accept.

BM25 Calibration

After two minutes and the reading has stabilized, Press the On/Off Enter button to accept.

To confirm the calibration, press either the or to select yes.

BM25 Calibration

After two minutes and the reading has stabilized, Press the On/Off Enter button to accept.

To confirm the calibration, press either the or to select yes.

Press the On/Off Enter button to accept this calibration.

BM25 Calibration

After two minutes and the reading has stabilized, Press the On/Off Enter button to accept.

If you wish to not confirm the calibration, then select no. This will revert the sensors calibration back to its original calibration.

BM25 Calibration Fail

If after two minutes the sensor reading is less then 50% of the cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

BM25 Calibration Fail

If after two minutes the sensor reading is less then 50% of the cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

This would indicate that the sensor is weak and should be replaced.

BM25 Calibration Fail

If after two minutes the sensor reading is less then 50% of the cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

If the user accepts this calibration, in the Real-Time Screen, the failed sensor will toggle between the word used and the sensor type.

BM25 Calibration Fail

If after two minutes the sensor reading is more then 25% above the applied cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

BM25 Calibration Fail

If after two minutes the sensor reading is more then 25% above the applied cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

This would indicate that the sensor's sensitivity is too high and needs to be replaced.

BM25 Calibration Fail

If after two minutes the sensor reading is more then 25% above the applied cal gas, upon pressing the On/Off Mode button, the BM25 will display the following screen.

If the user accepts this calibration, in the Real-Time Screen, the failed sensor will toggle between the word fail and the sensor type.

BM25 Calibration

To select another sensor to calibrate press the .

BM25 Calibration

To select another sensor to calibrate press the .

As already covered, follow the same calibration steps for each installed sensor.

Back

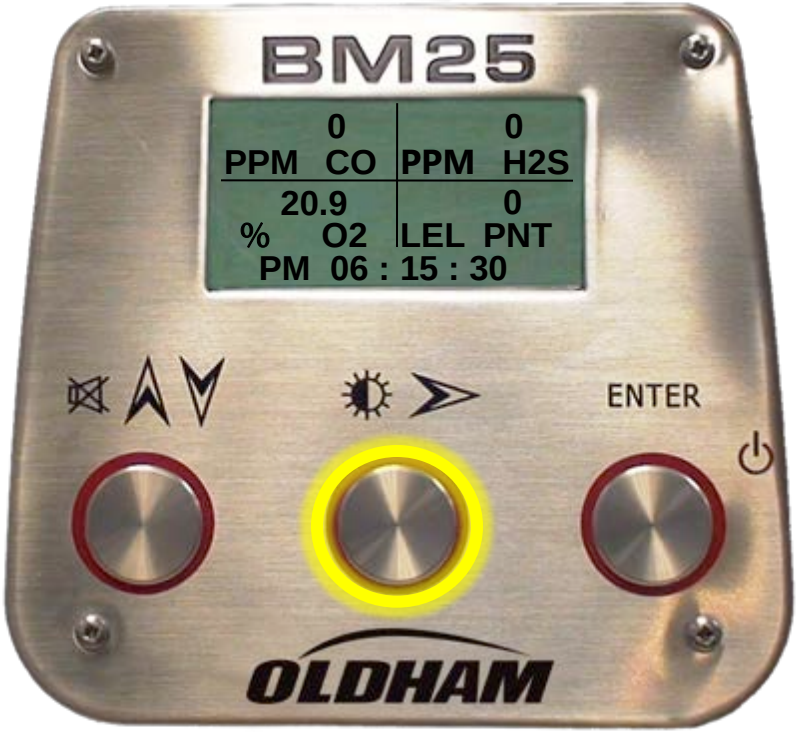
BM25
Configuration
Module 5

Back

BM25 Configuration

Through the instrument setup mode, the user can configure the BM25 to their needs for the alarms, switching sensors off and on, zeroing, calibration, date and time along with other instrument functions. This allows the user to configure the BM25 for use in their application.

BM25 Accessing Configuration



From the real-time operation screen, press the multiple times until you arrive at the Enter Maintenance Code screen.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

The code for the BM25 will be defaulted from the factory to the number 18.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

To type in the code, press the two times to underline the third number column.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

Press the once to type in a one.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

Press the once to type in a one.

Press the to advance to the last column.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

Press the multiple times to type in an eight.

BM25 Accessing Configuration

Enter Maintenance Code – Through this screen the user can access the BM25 configuration by typing in the correct code.

Press the multiple times to type in an eight.

Press the On/Off Enter button to enter the code.

BM25 Program Configuration

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

BM25 Program Configuration

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To access, press the On/Off Enter button.

BM25 Program Configuration

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To access, press the On/Off Enter button.

Pressing the button, the user can highlight the sensor of choice.

BM25 Program Configuration

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To select the sensor press the On/Off Enter button.

BM25 Turning Sensor Off

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To turn a sensor off, press either the or button.

BM25 Turning Sensor Off

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To turn a sensor off, press either the or button.

Press the On/Off Enter button.

BM25 Turning Sensor Off

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To confirm this change the user must press either the ✸ ➢ or ☒ ∧ ∨ to change the no to a yes.

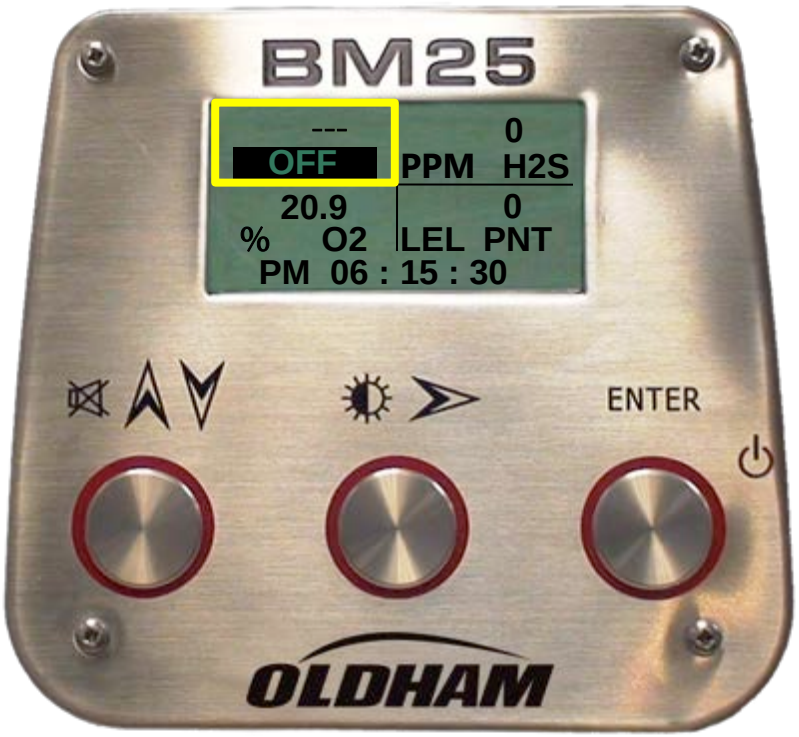
BM25 Turning Sensor Off

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To confirm this change the user must press either the or to change the no to a yes.

Press the On/Off Enter button.

BM25 Turning Sensor Off



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

In the Real-Time Operation Screen the sensor that has been turned off will toggle between the words OFF and the sensor type. This sensor is no longer detecting gas.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To change the alarm set point of a sensor, press the On/Off Enter button.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To change the alarm set point of a sensor, press the On/Off Enter button.

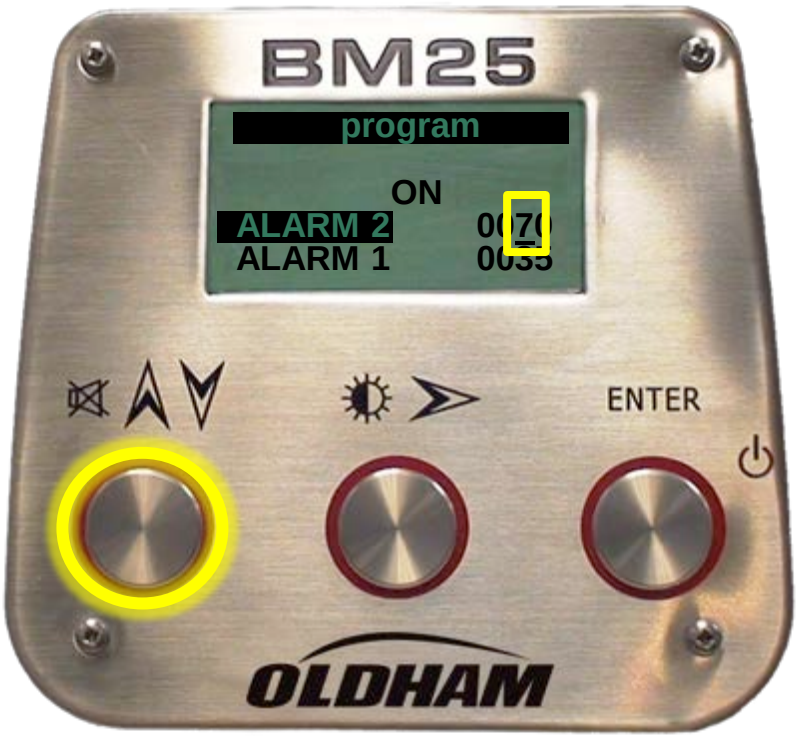
Alarm 2 will be highlighted and the alarm can be changed.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To enter in a new value, use the button to select the numerical column.

BM25 Changing Alarms



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To enter in a new value, use the button to select the numerical column.

Press the to select the new value.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

With the new value entered, press the to select the last numerical column.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

With the new value entered, press the to select the last numerical column.

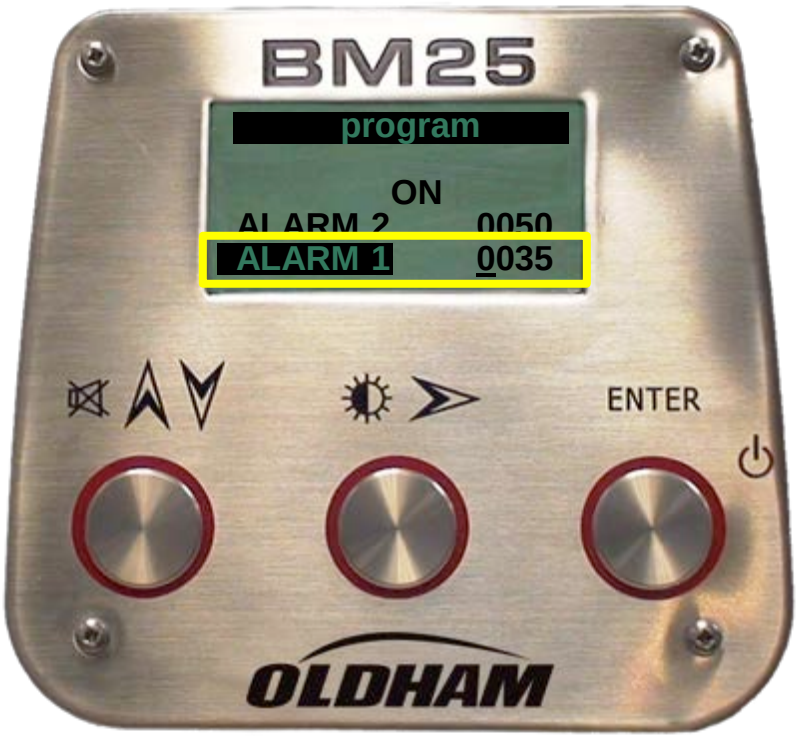
Once again use the button to select the value.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Once you have the new alarm set point selected, press the On/Off Enter button.

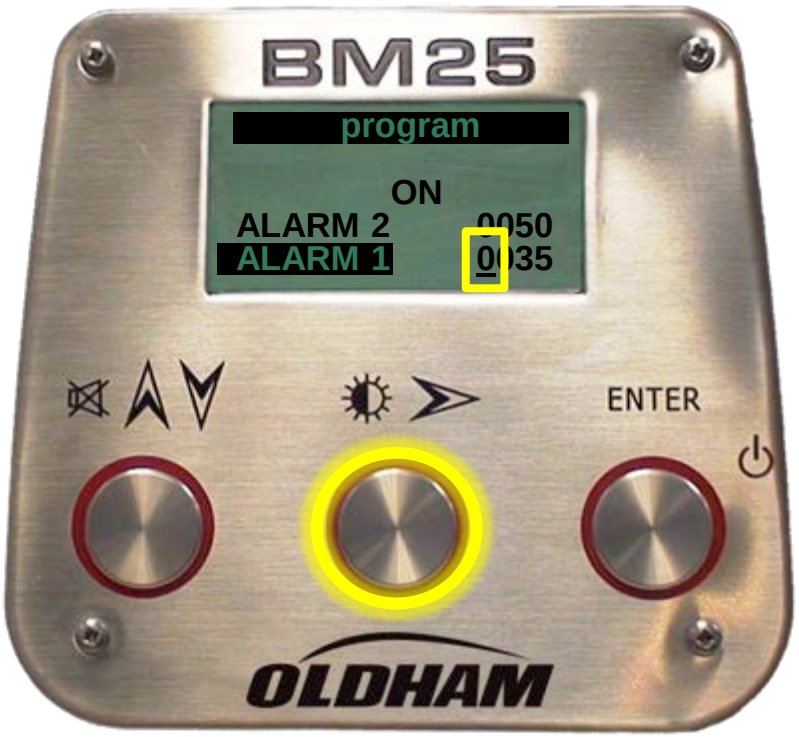
BM25 Changing Alarms



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Alarm 1 will now be highlighted and available for change.

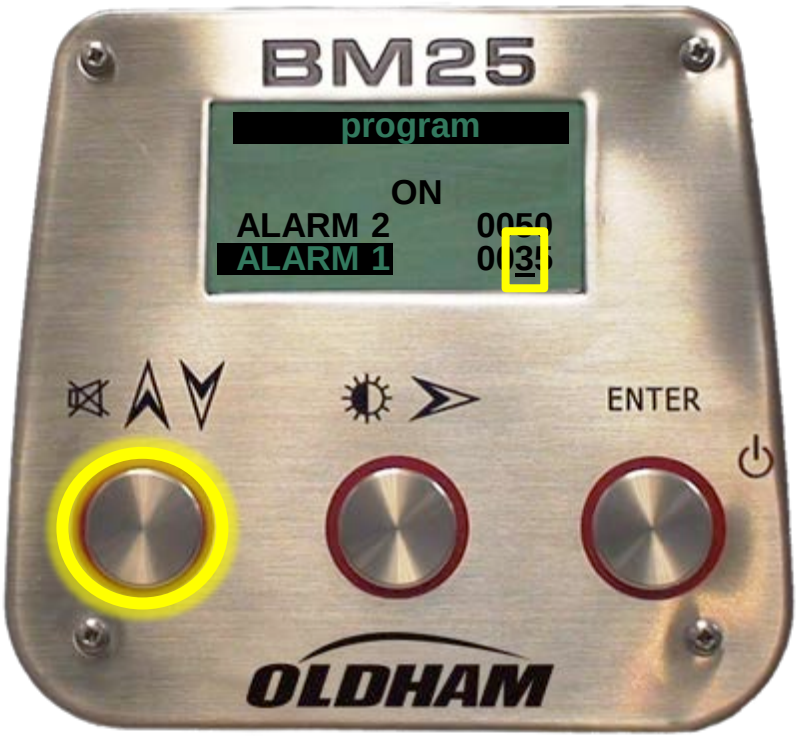
BM25 Changing Alarms



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To enter in a new value, use the button to select the numerical column.

BM25 Changing Alarms

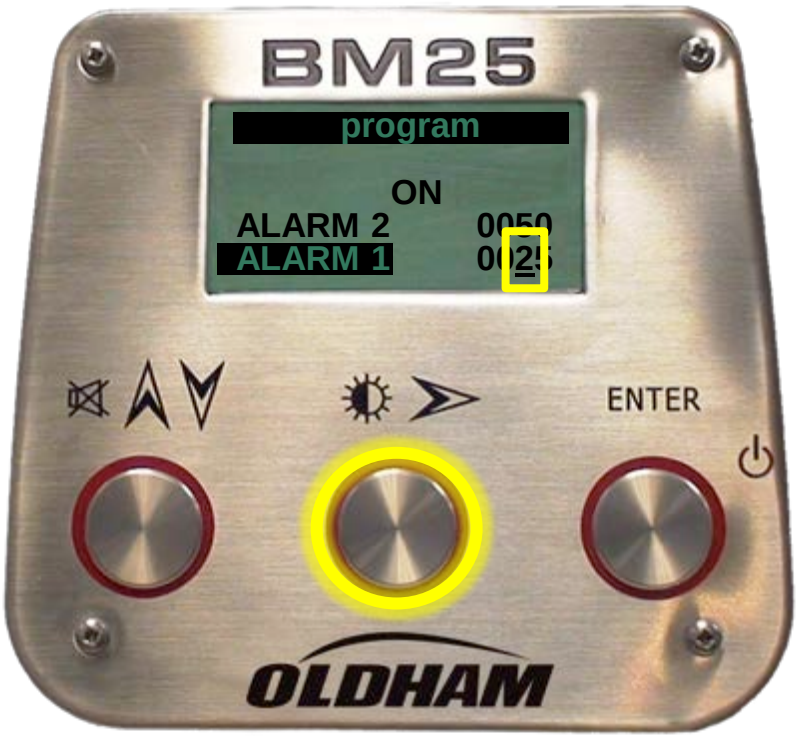


Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To enter in a new value, use the button to select the numerical column.

Press the to select the new value.

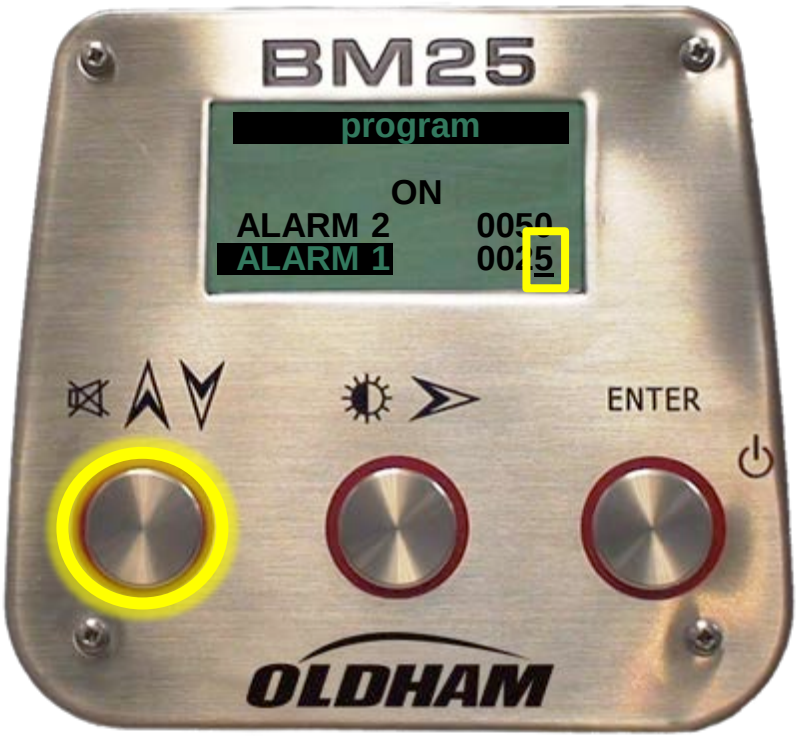
BM25 Changing Alarms



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

With the new value entered, press the to select the last numerical column.

BM25 Changing Alarms



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

With the new value entered, press the to select the last numerical column.

Once again use the button to select the value.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Once you have the new alarm set point selected, press the On/Off Enter button.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To confirm this change the user must press either the or to change the no to a yes.

BM25 Changing Alarms

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To confirm this change the user must press either the or to change the no to a yes.

Press the On/Off Enter button.

BM25 Program Configuration

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

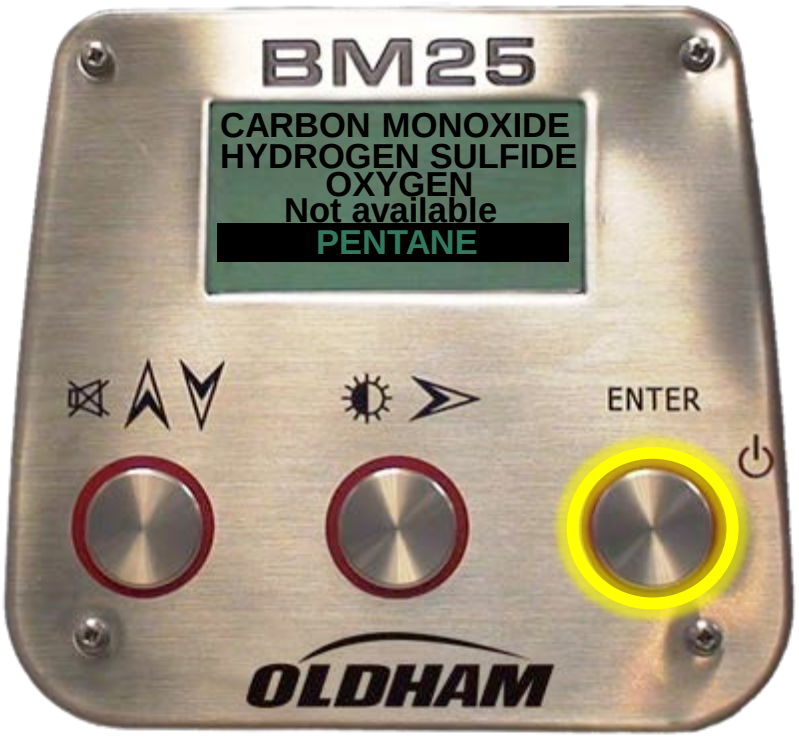
Pressing the button, the user can highlight the sensor of choice.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

If the user chooses the combustible gas sensor, in addition to changing the alarm set points, the user can also select the correlation factor of the gas in their environment.

BM25 LEL Correlation Factor



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To select this sensor, press the On/Off Enter button.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

To select this sensor, press the On/Off Enter button.

The user can turn the sensor off or on.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Alarm set points can be changed.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Alarm set points can be changed.

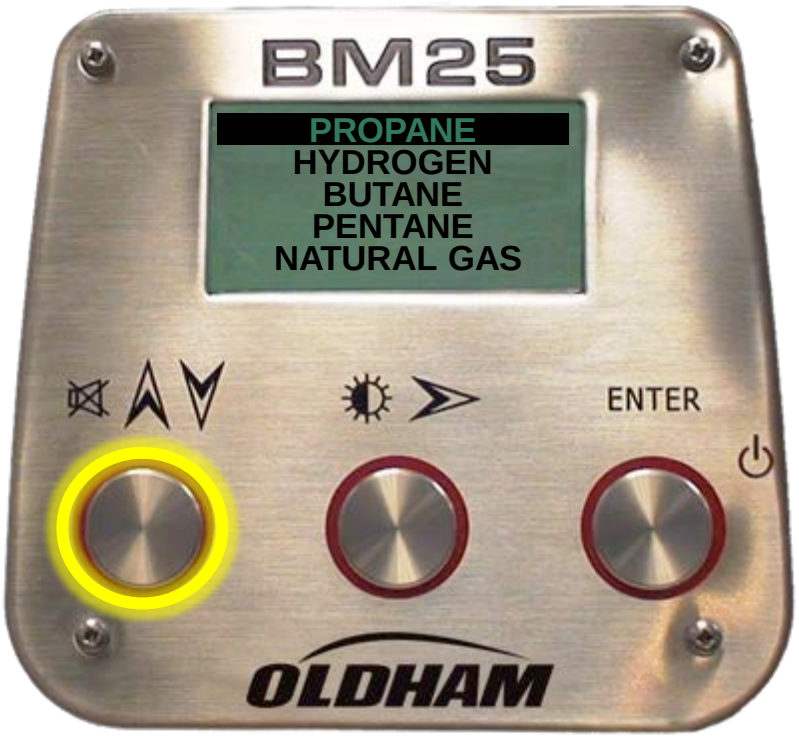
Pressing the On/Off Enter button saves these changes.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

This screen will show 31 preset correlation factors.

BM25 LEL Correlation Factor



Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

This screen will show 31 preset correlation factors.

Press the to scroll down through the list.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

This screen will show 31 preset correlation factors.

Press the to scroll through the list.

BM25 LEL Correlation Factor

Program – This option provides the user the ability to turn the sensors on or off and set alarm set points.

Upon selecting a new correlation factor, pressing On/Off Enter button will apply that correlation to the combustible gas reading.

BM25 Calibrate

Press the button to select the option.

BM25 Calibrate

Press the button to select the option.

.

Calibrate – This option allows the user to calibrate the BM25. This is covered in-depth in Module 4.

BM25 Auto-Zero

Press the button to select the option.

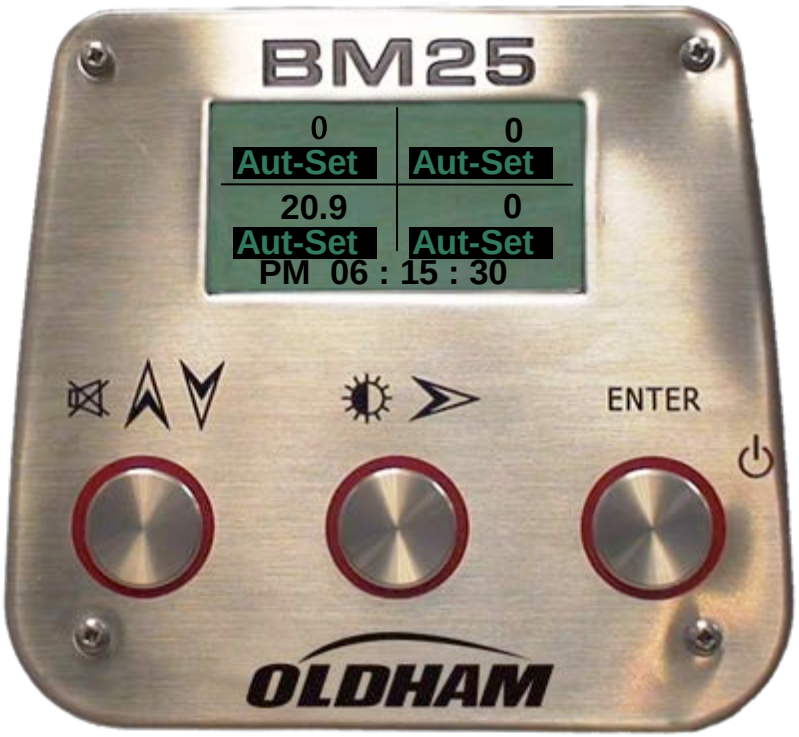
Auto-zero – This option allows the user to have all installed sensors zeroed to ambient conditions. This should only be done in clean air.

BM25 Auto-Zero

Auto-zero – This option allows the user to have all installed sensors zeroed to ambient conditions. This should only be done in clean air.

Once auto-zero is highlighted, pressing the On/Off Enter button will start the process.

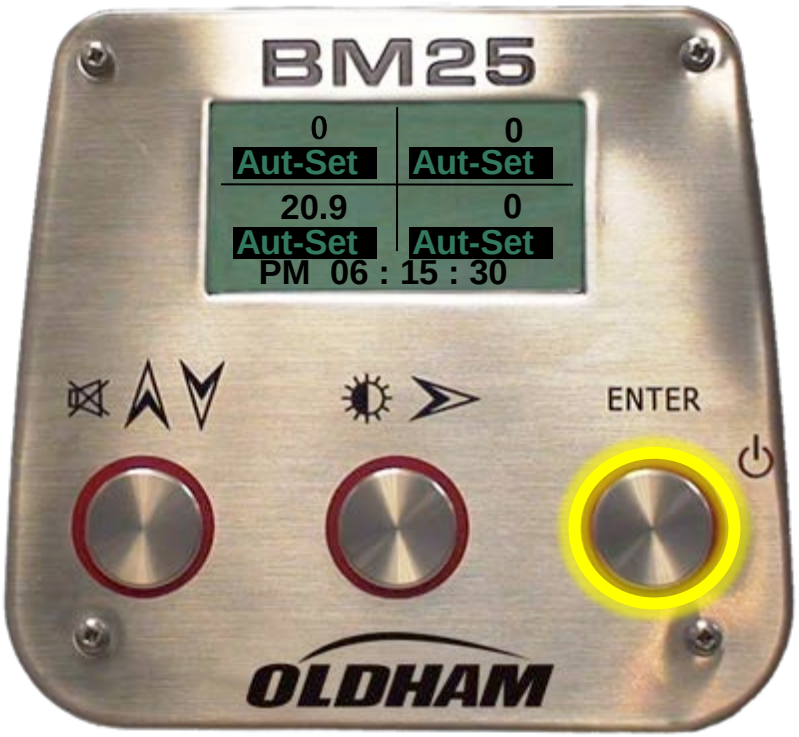
BM25 Auto-Zero



Auto-zero – This option allows the user to have all installed sensors zeroed to ambient conditions. This should only be done in clean air.

The display will toggle between the words Aut-Zer and the sensor types.

BM25 Auto-Zero



Auto-Zer – This option allows the user to have all installed sensors zeroed to ambient conditions. This should only be done in clean air.

The display will toggle between the words Aut-Zer and the sensor types.

Press On/Off Enter to set.

BM25 Set Time and Date

Press the button to select the option.

Date / Hour – This option allows the user to set the current date and time in the BM25.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

Once Date / Hour is highlighted, press the On/Off Enter button to make a change to the date and time.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

To change the time, use the to underline the number that needs changed.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

To change the time, use the to underline the number that needs changed.

Pressing the allows the user to advance number.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

To set the date, keep pressing the button until date is highlighted.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

Use the button to underline the number that needs changed.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

Use the button to underline the number that needs changed.

Pressing the allows the user to advance the value.

BM25 Set Time and Date

Date / Hour – This option allows the user to set the current date and time in the BM25.

To exit, press the On/Off Enter button.

BM25 Wireless

Press the button to select the option

Wireless – This option allows the user to set the RF channel and the Slave ID when in wireless mode. This is covered in-depth in module 2.

BM25 Mac List

Press the button to select the option

MAC list – This option allows the user to get the MAC address of each BM25 on the network and its particular status. This is covered in-depth in module 2.

BM25 Exit

Press the button to select the option

Exit – Selecting this option will exit the user out of the configuration screen and back to the Real-Time Operation Screen.

Back

BM25

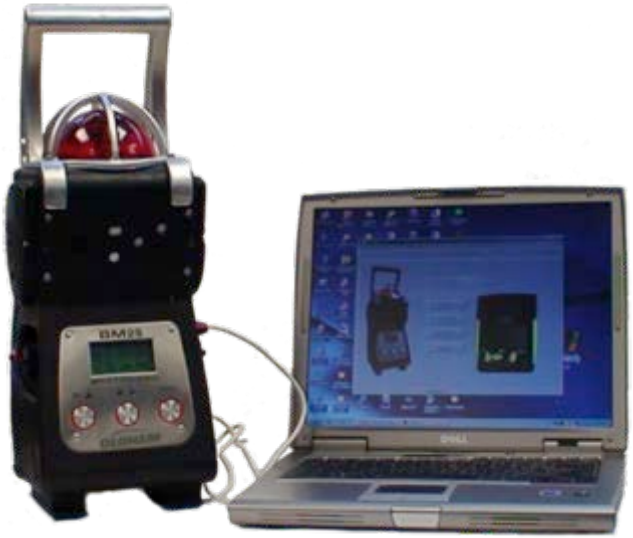
COM2100 Software

Module 6

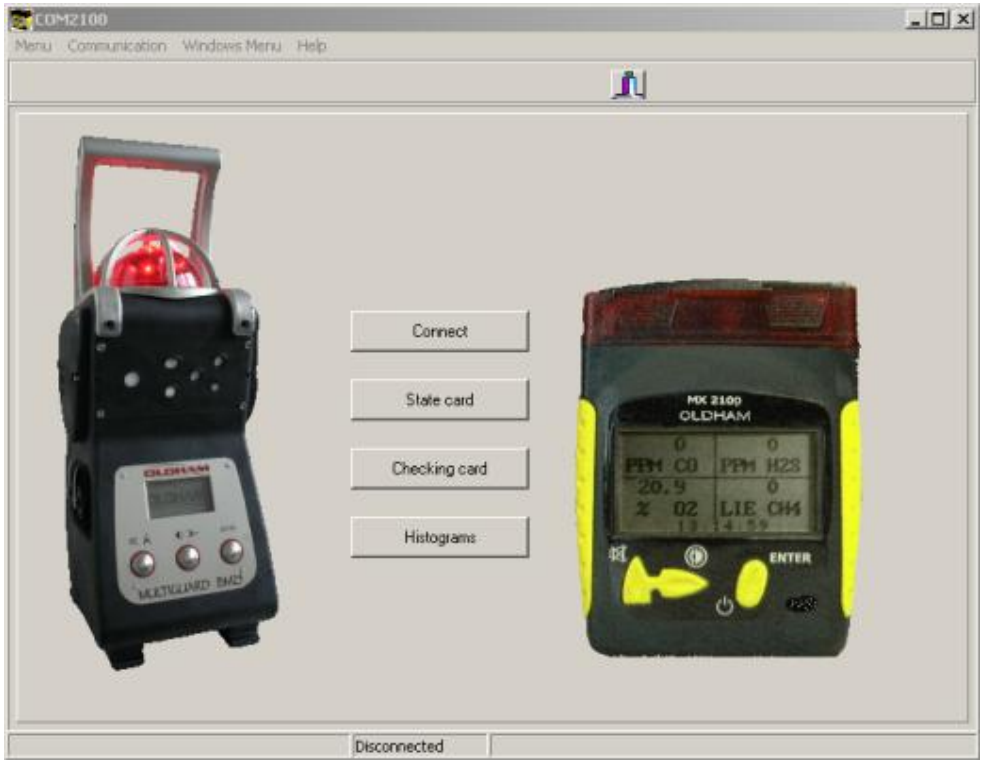
Back

BM25 COM2100 Software

For configuring the BM25, downloading the datalogger, automating calibration and programming of the individual channels, the COM2100 software program can be employed. This allows all BM25 operations and setup to be done through a PC.

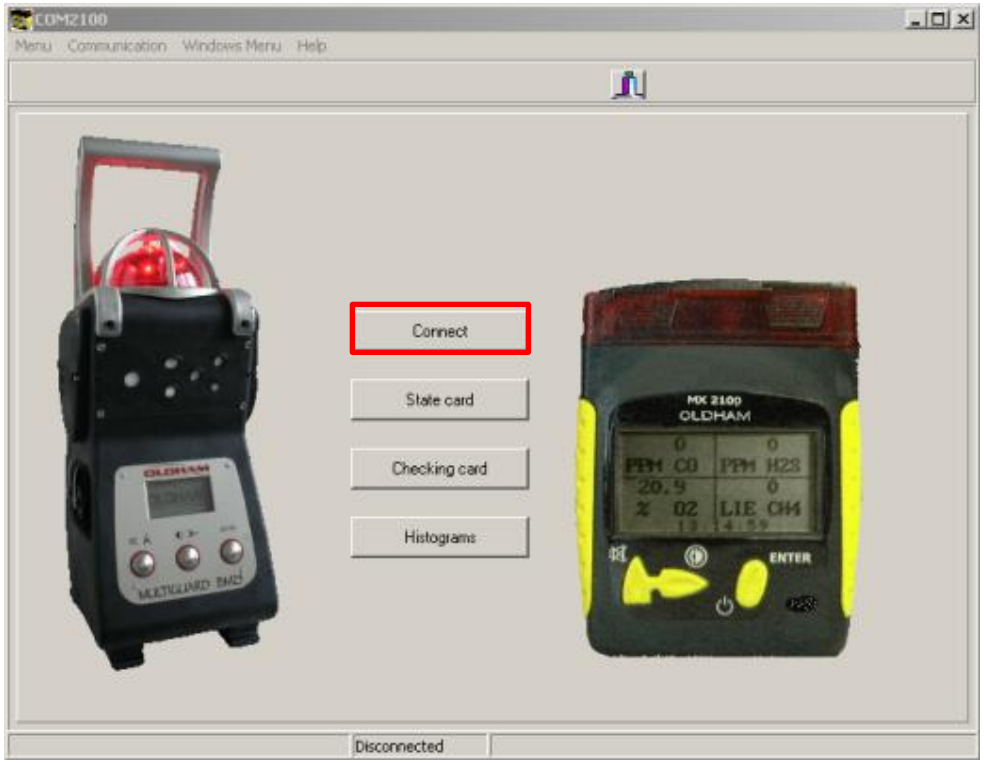


BM25 Main Page



From the main page the user can select four different options.

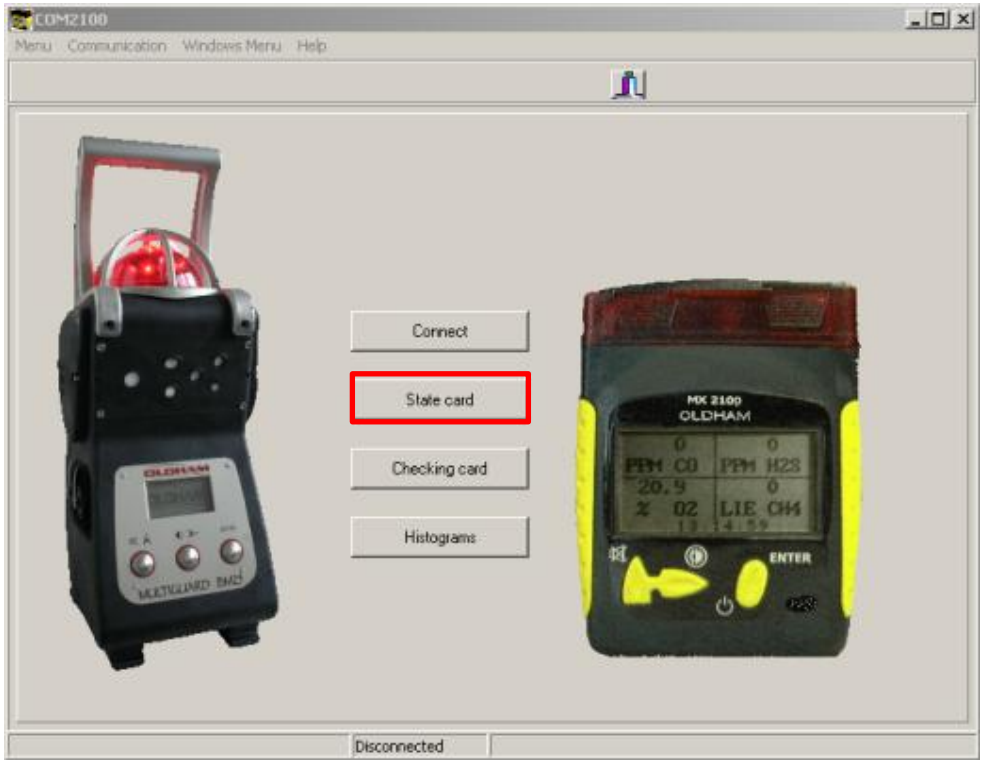
BM25 Connect



From the main page the user can select four different options.

Connect – This option allows the user to establish communications with the unit.

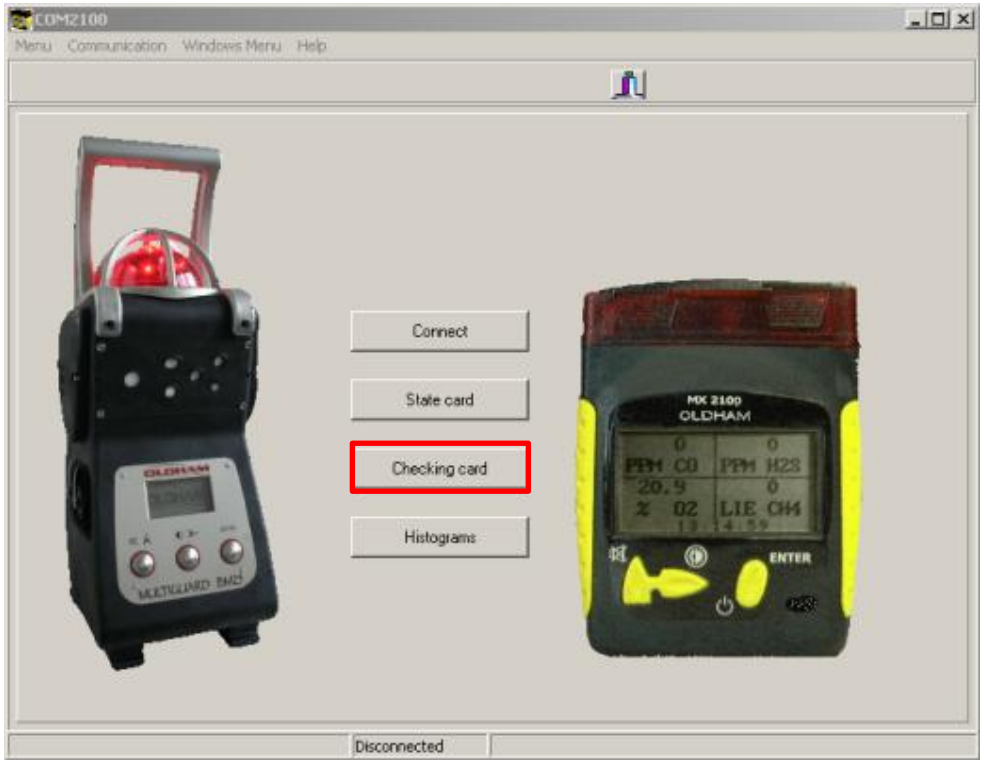
BM25 State Card



From the main page the user can select four different options.

State Card – If selected, this option will allow the user to view a preloaded BM25 configuration.

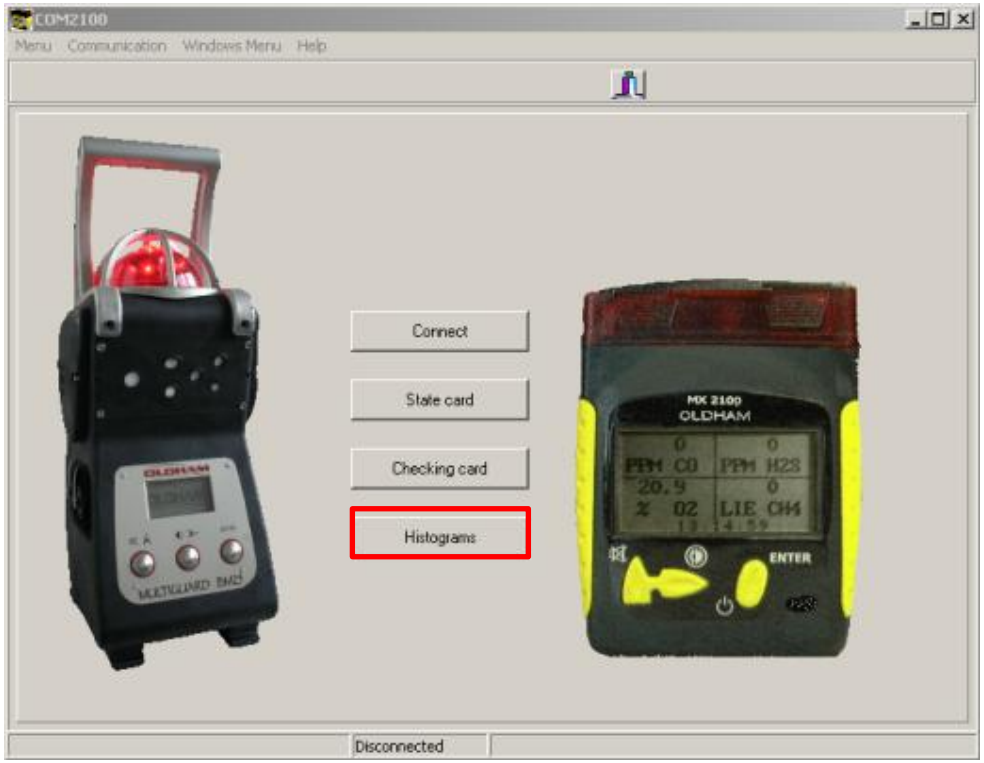
BM25 Checking Card



From the main page the user can select four different options.

Checking Card – This allows the user to bring up a calibration certificate.

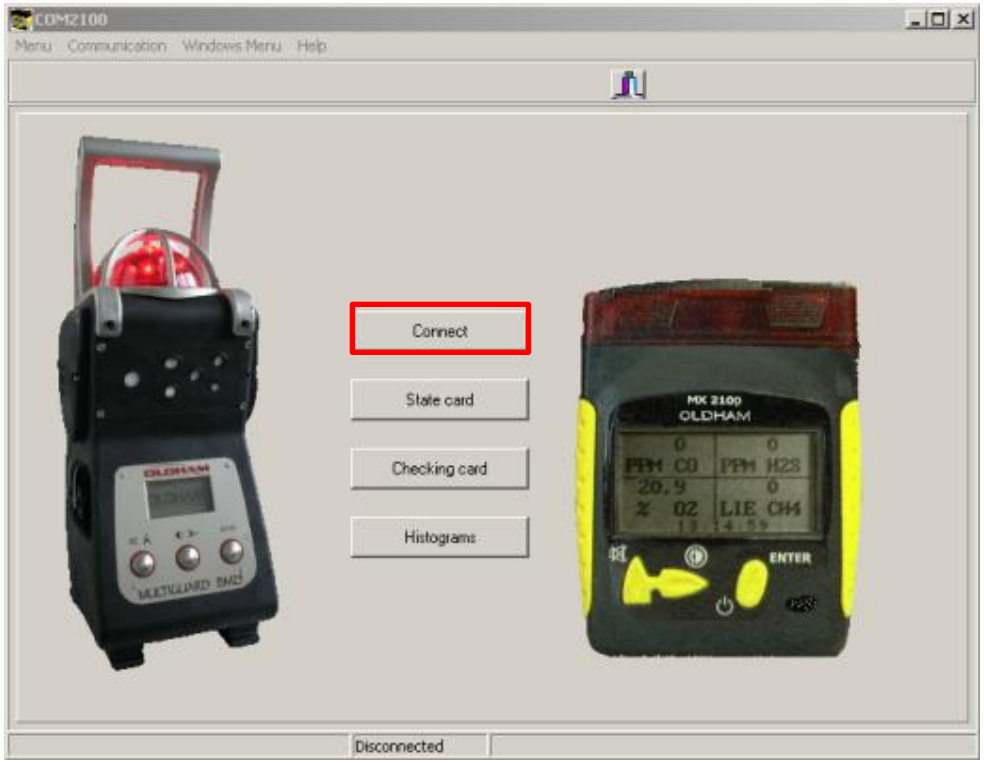
BM25 Histograms



From the main page the user can select four different options.

Histograms – Through this option the user can view and print all previously saved datalogged files.

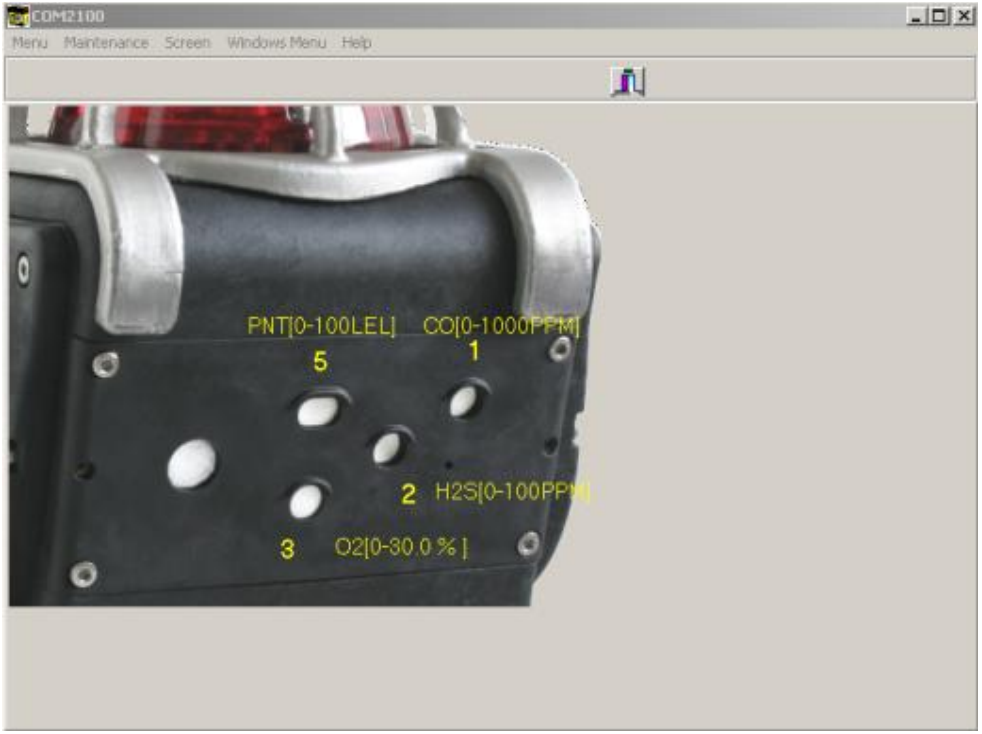
BM25 Connecting BM25



First ensure that the BM25 is turned on and then insert the IR cord into the BM25. Click on Connect to establish communications between the BM25 and the PC.

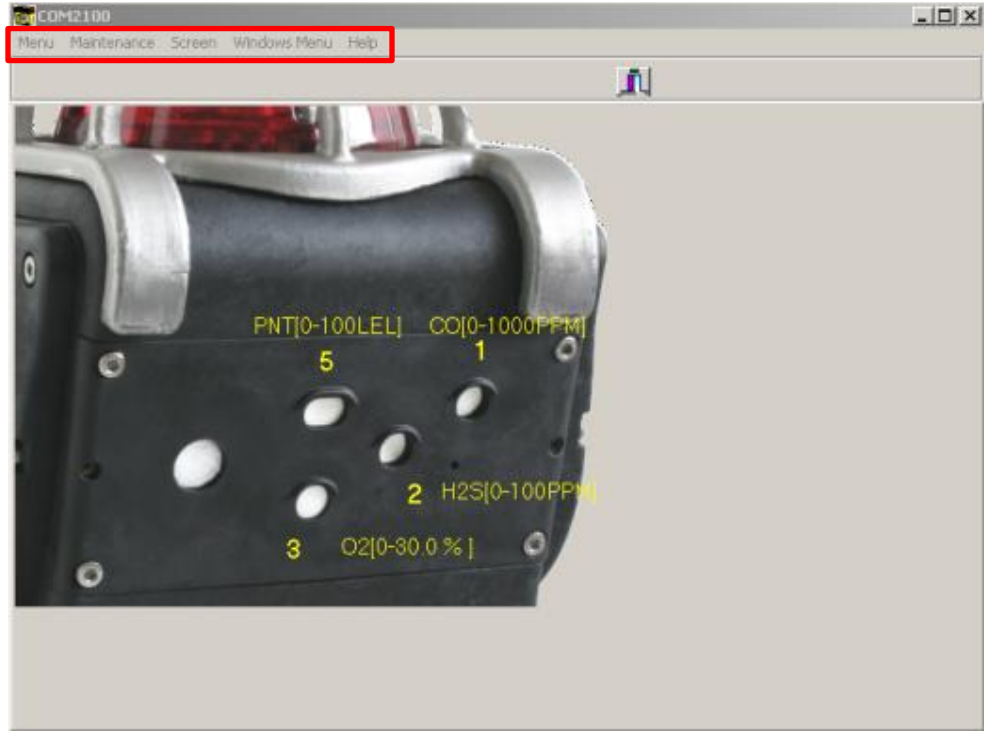
BM25 IR Connection Video

BM25 Connecting BM25



From the main screen, the COM2100 software will show the location and measuring range of all installed sensors.

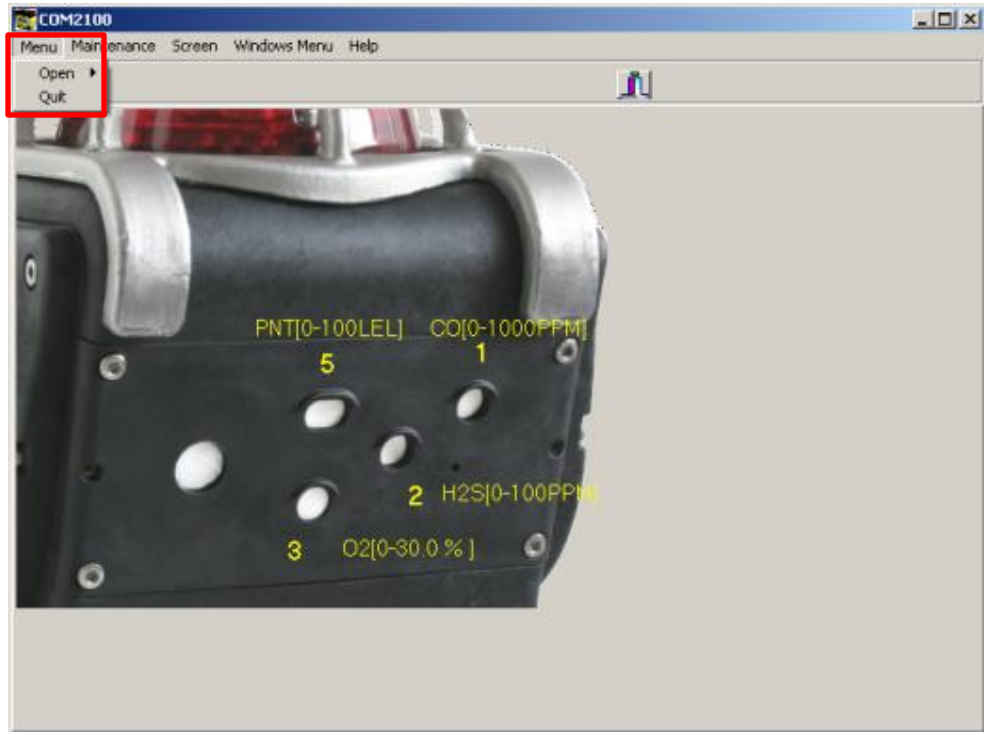
BM25 Menu Tab



From the main screen, the COM2100 software will show the location and measuring range of all installed sensors.

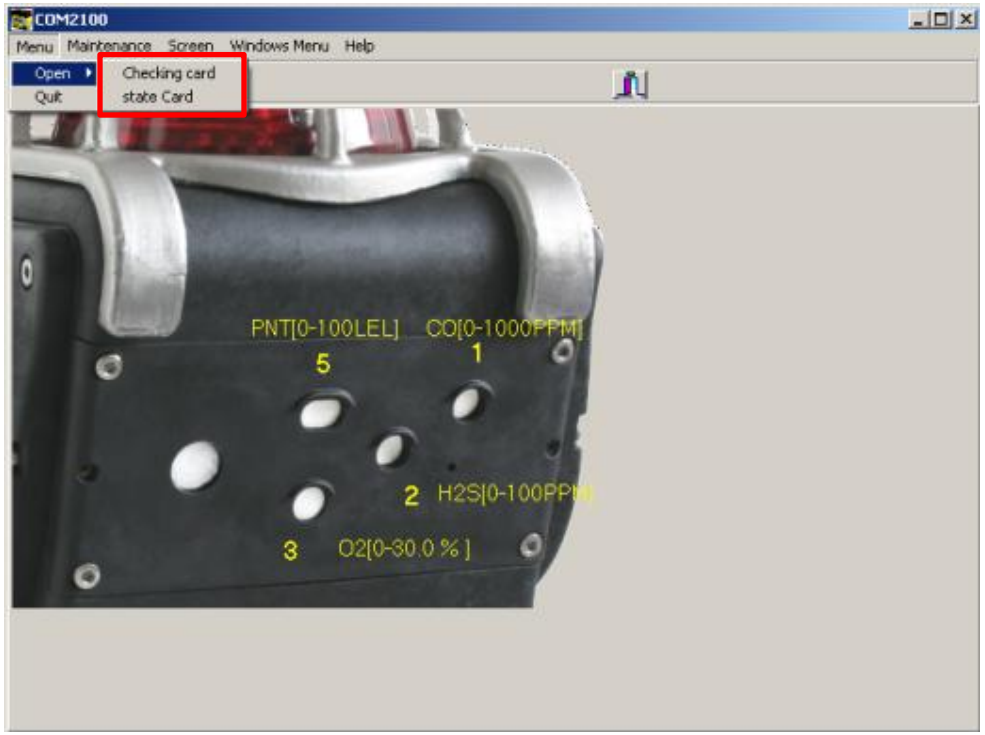
Along the top of the screen there are five drop down file headers.

BM25 Menu Tab



Menu – Clicking on this will allow for two options:

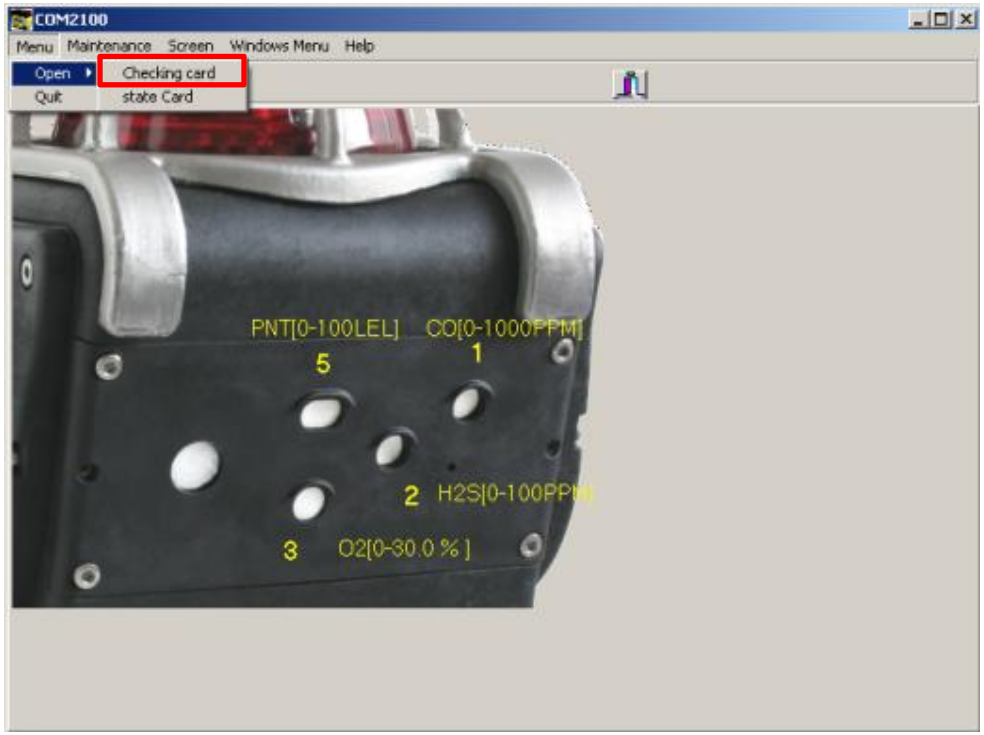
BM25 Open State Card



Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

BM25 Checking State Card

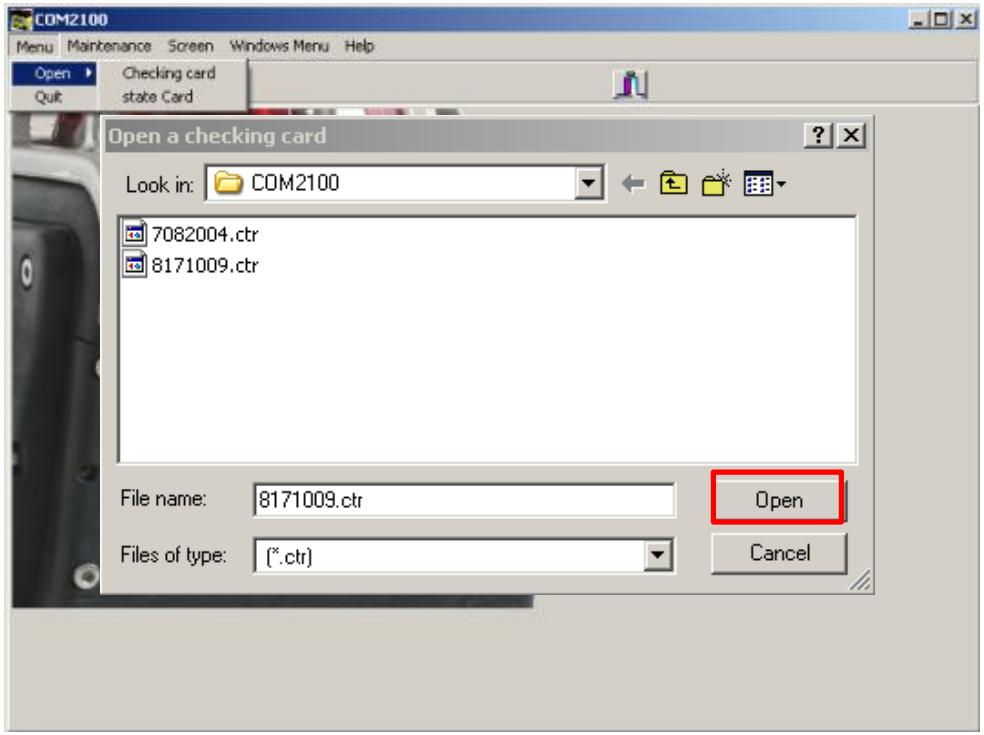


Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

Checking Card – By selecting this option the user can view the previous calibration.

BM25 Checking State Card

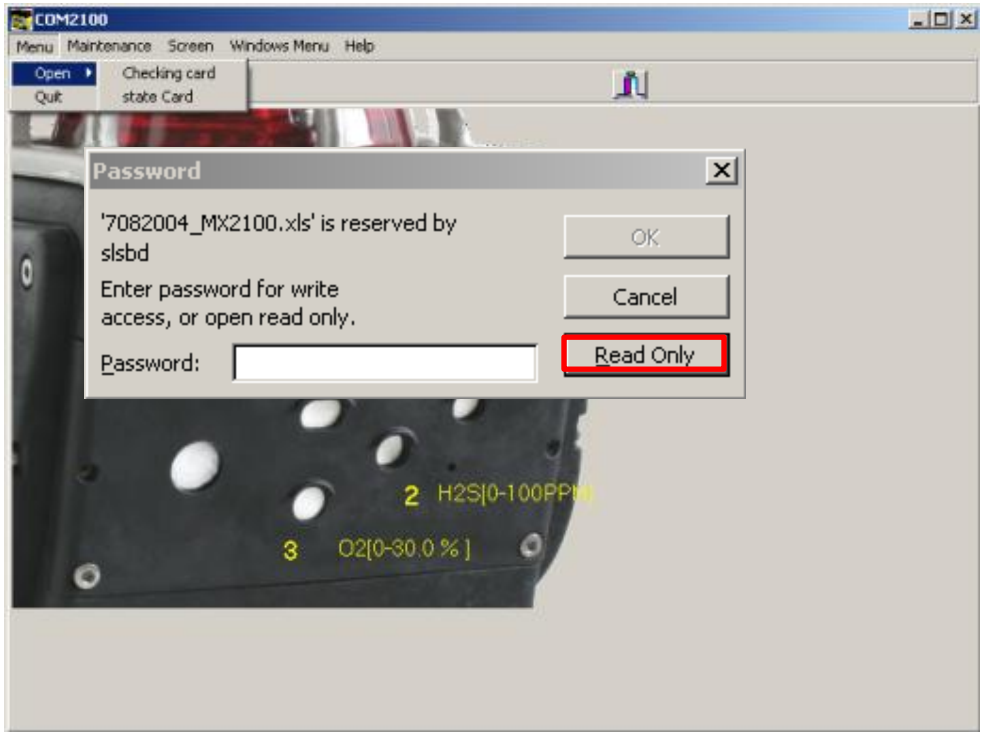


Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

Checking Card – The user can now click on the calibration file they wish to view then click Open.

BM25 Checking State Card

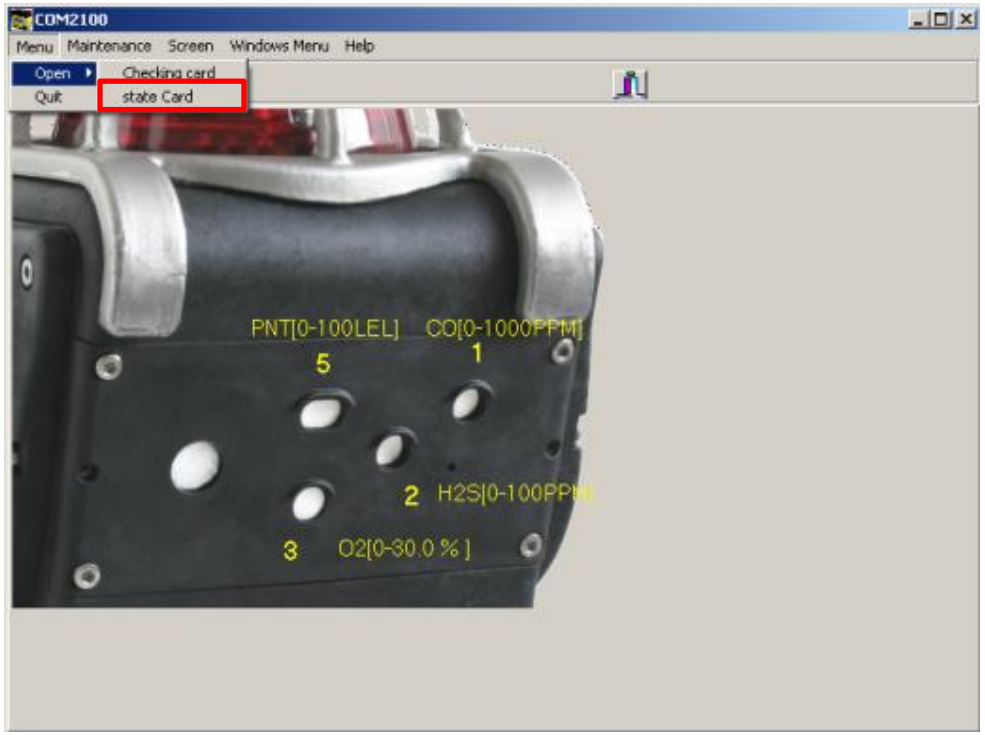


Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

Checking Card – To view the calibration certificate, click on Read Only.

BM25 State Card

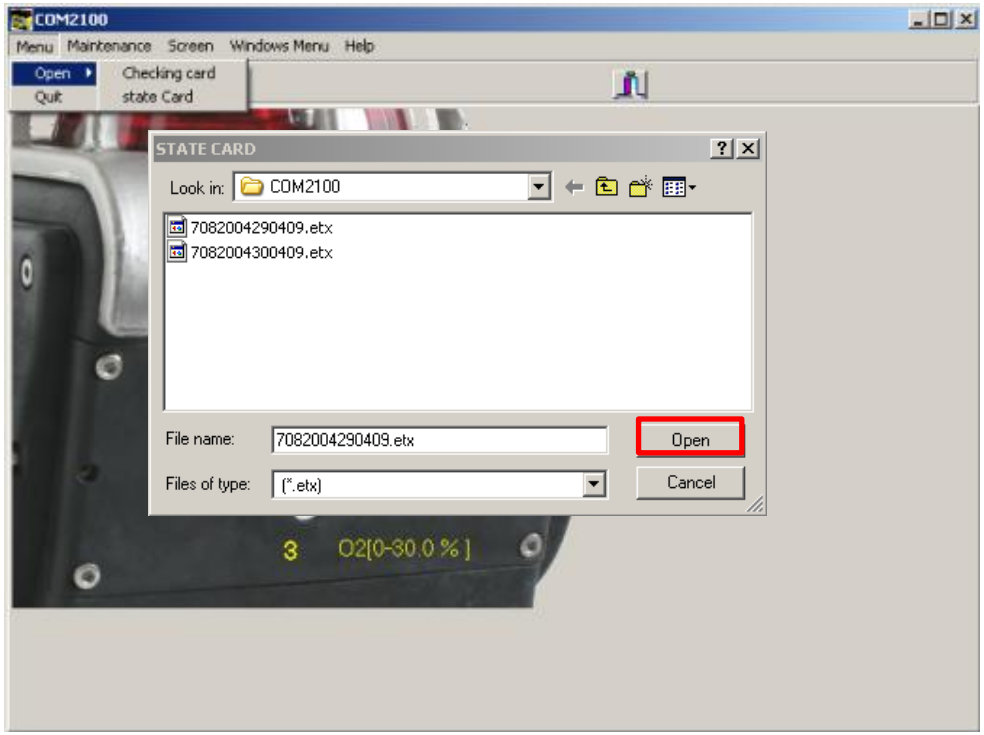


Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

State Card – By selecting this option the user can view the current configuration of the BM25.

BM25 State Card

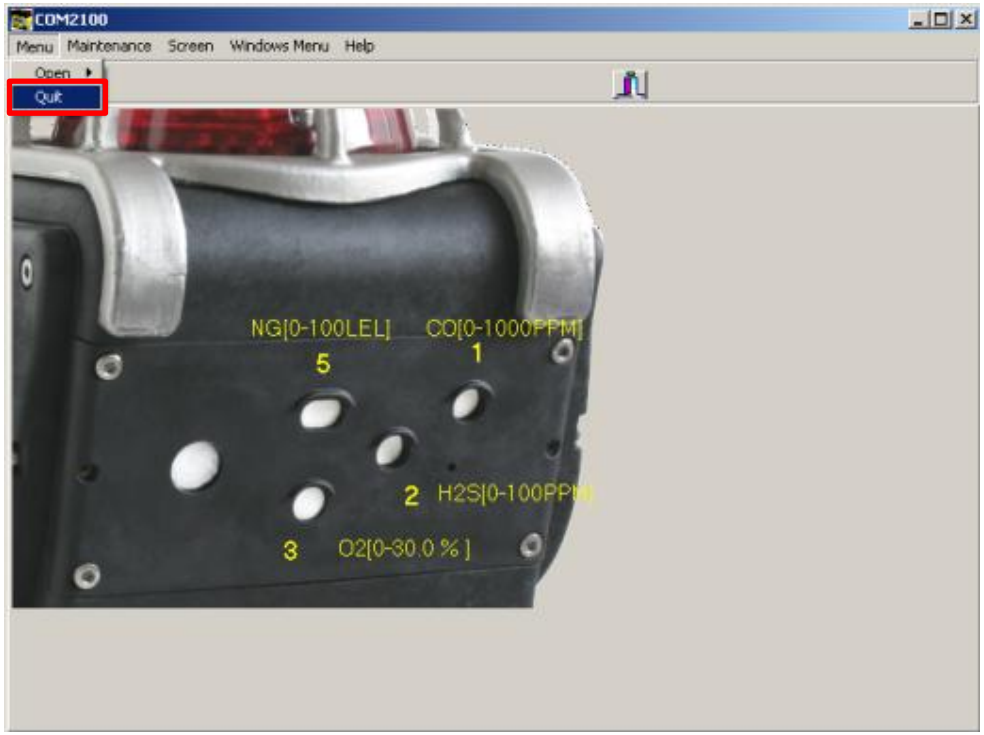


Menu – Clicking on this will allow for two options:

Open – When selected there will be two options available to the user.

State Card – To view a BM25 configuration, click on the file of interest then click Open.

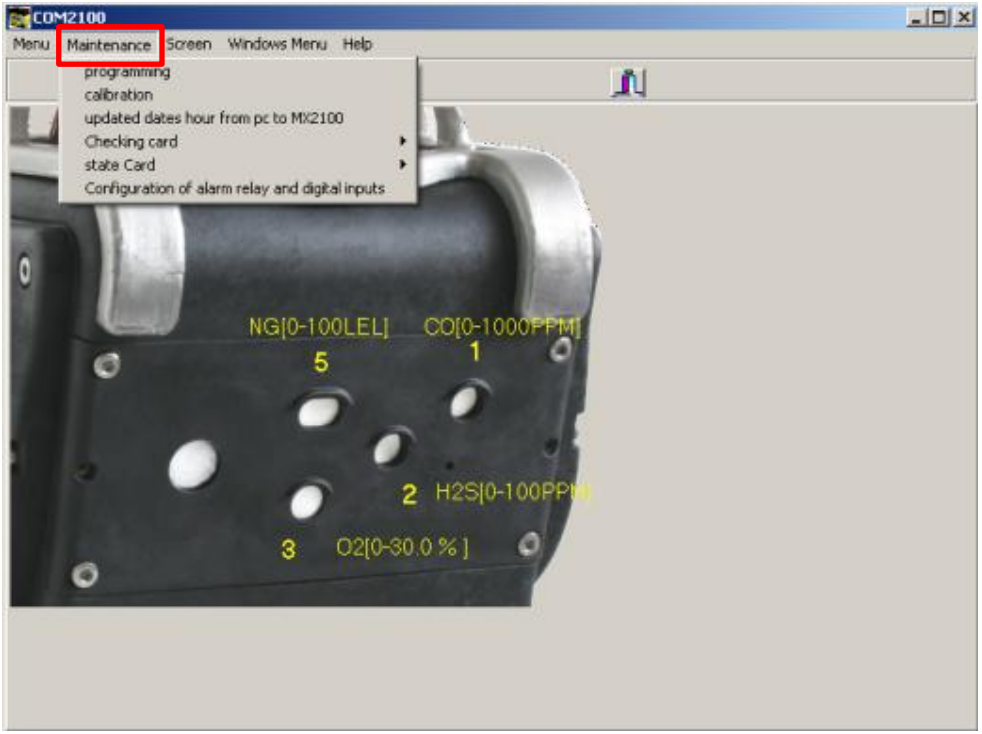
BM25 Menu Quit



Menu – Clicking on this will allow for two options:

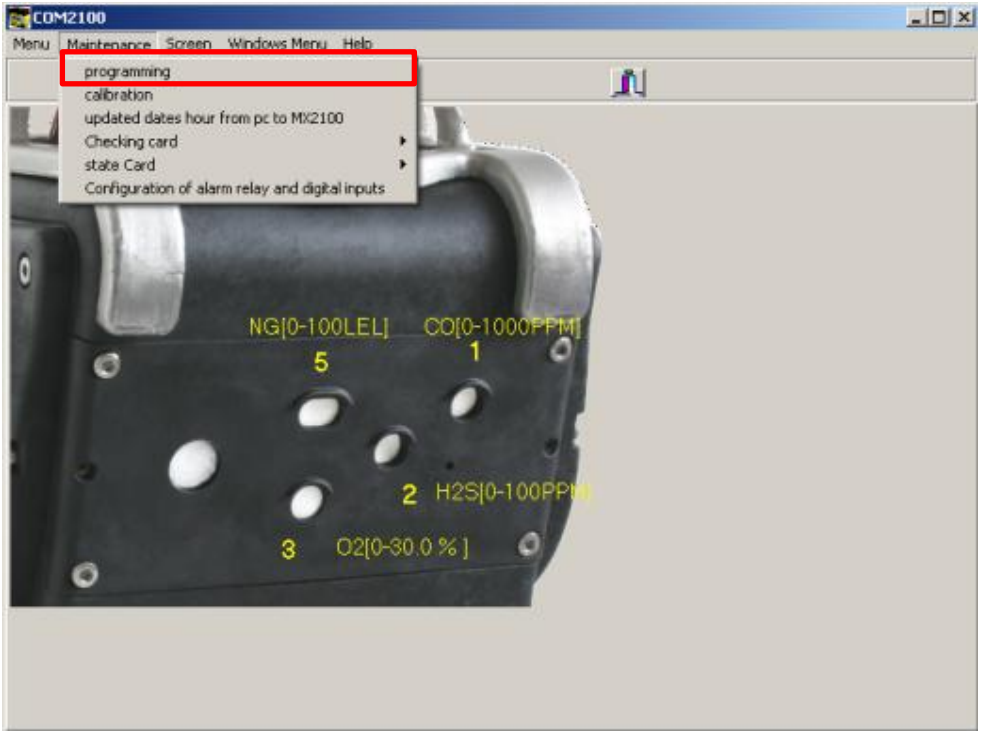
Quit – Clicking this will allow the user to exit the program.

BM25 Maintenance Tab



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

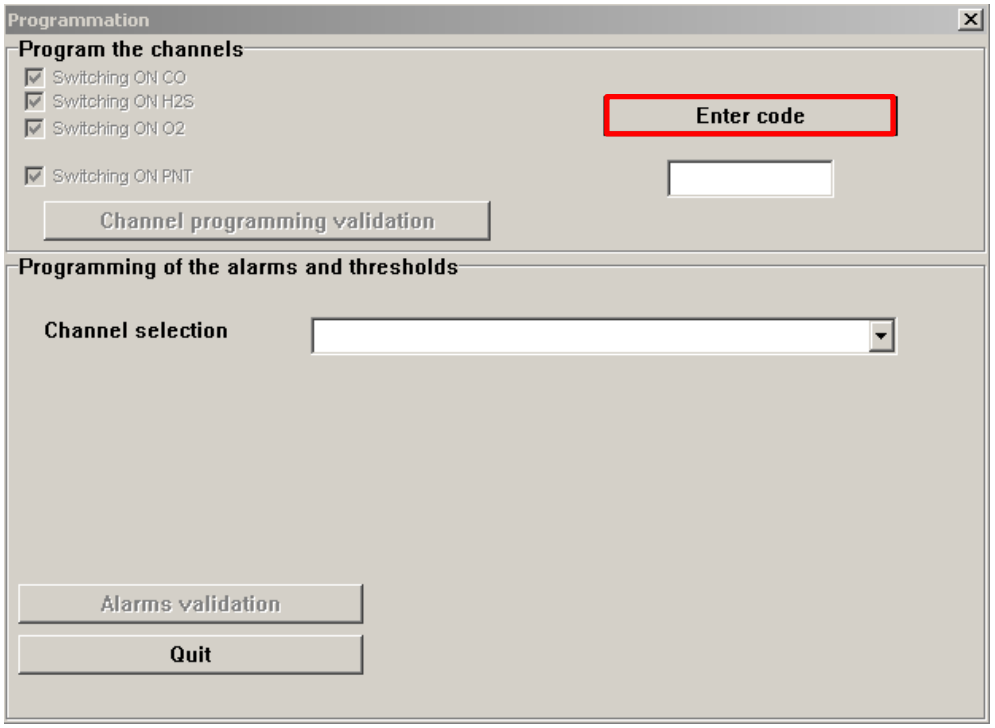
BM25 Programming Option



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming – This option allows the user to program the sensors and set their alarm set-point values.

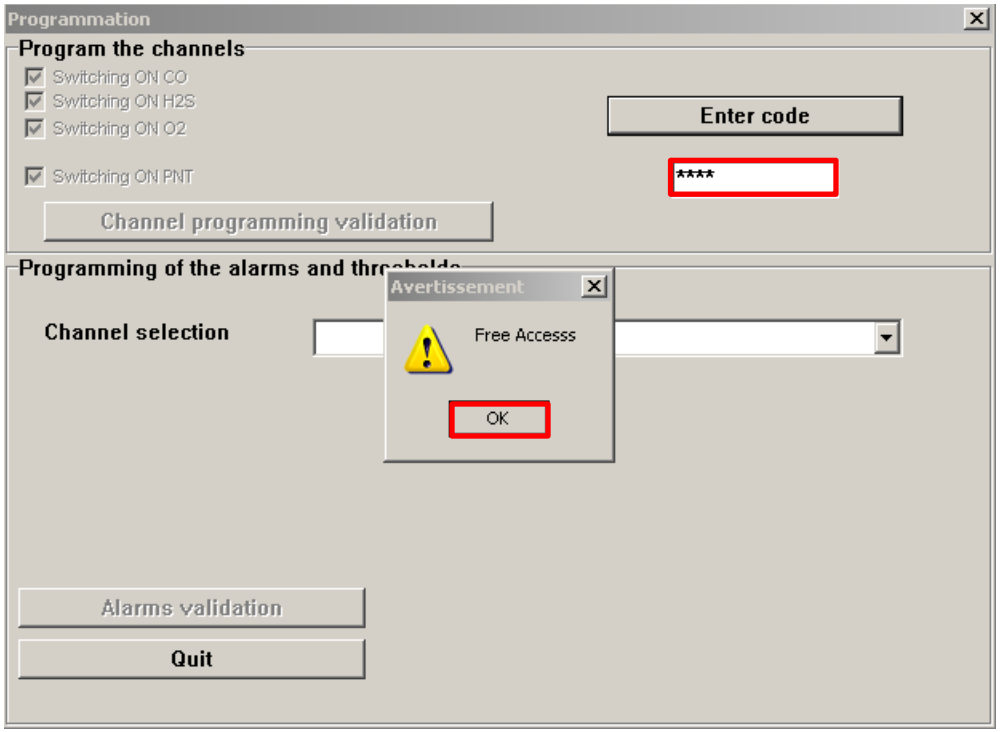
BM25 Programming Option



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming – Before changes can be made, the user must enter in their code.

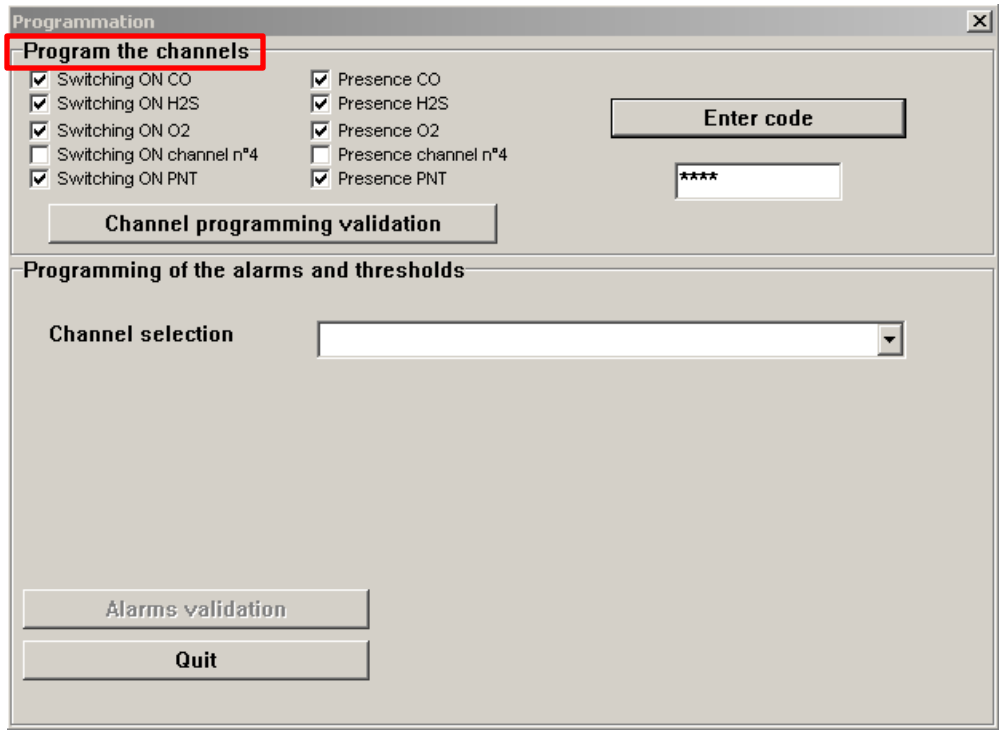
BM25 Programming Option



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming – This code is defaulted to “1000” and upon entering, the COM2100 software will confirm access. Click OK to continue.

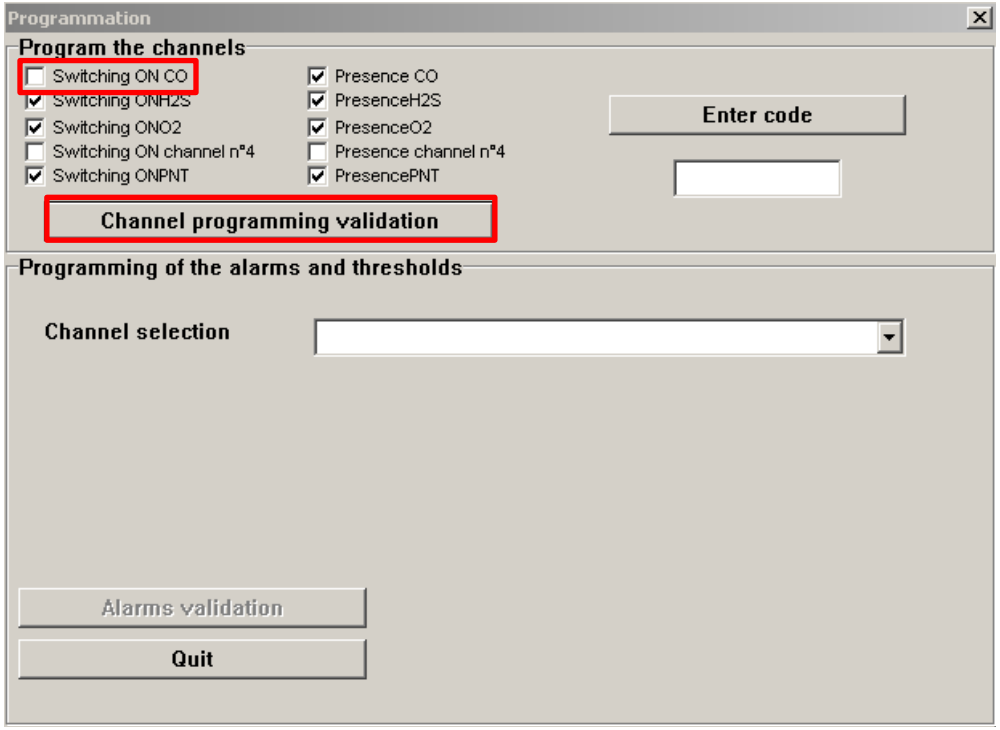
BM25 Programming Channels



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming Channels – This option allows the user to turn on and off sensor(s) by checking or un-checking the sensor type.

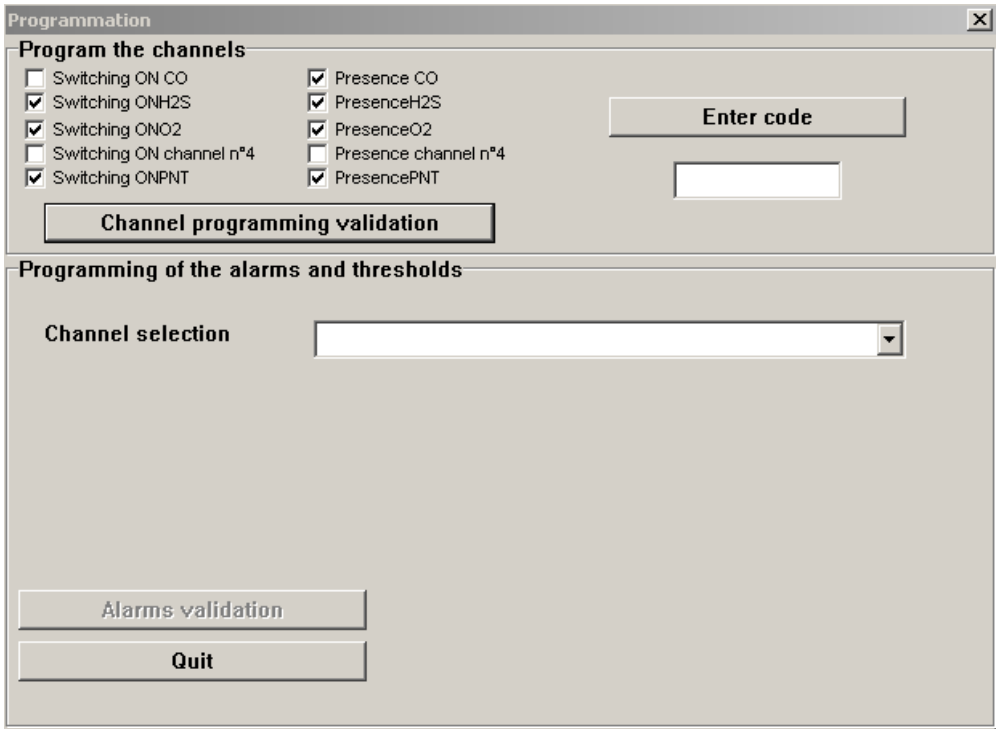
BM25 Programming Channels



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming Channels – With CO unchecked, the user must click on “Channel programming validation” to take effect.

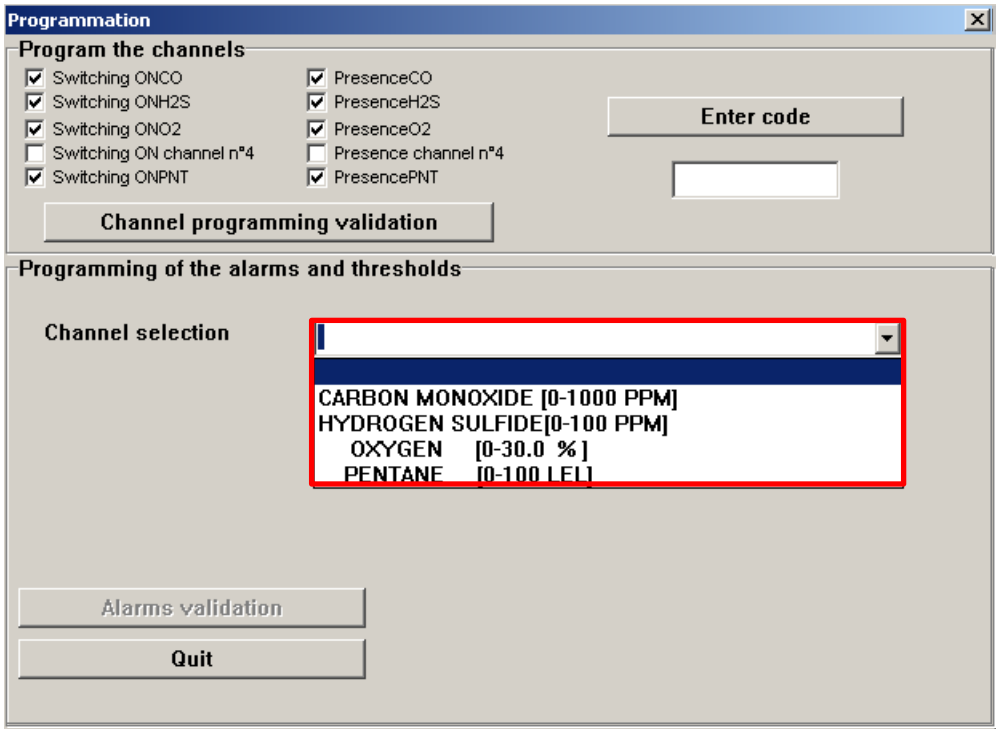
BM25 Programming Channels



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Programming Channels – The CO sensor will now be turned off and the display will reflect this.

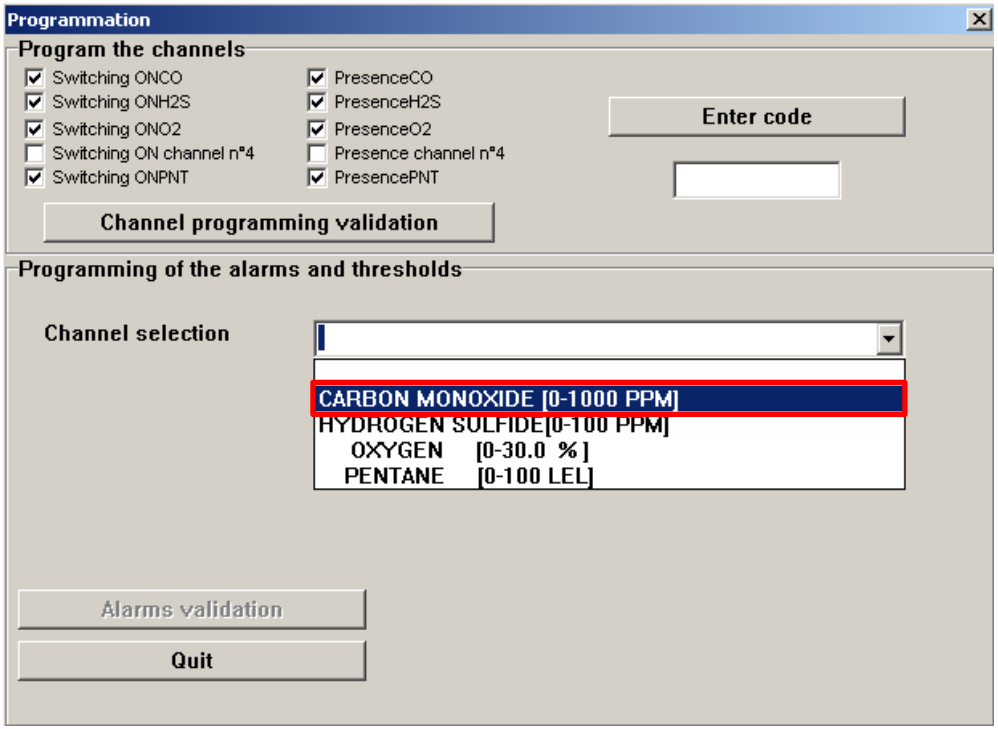
BM25 Channel Selection



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Channel Selection – This dropdown allows the user to configure the sensor alarm set-point.

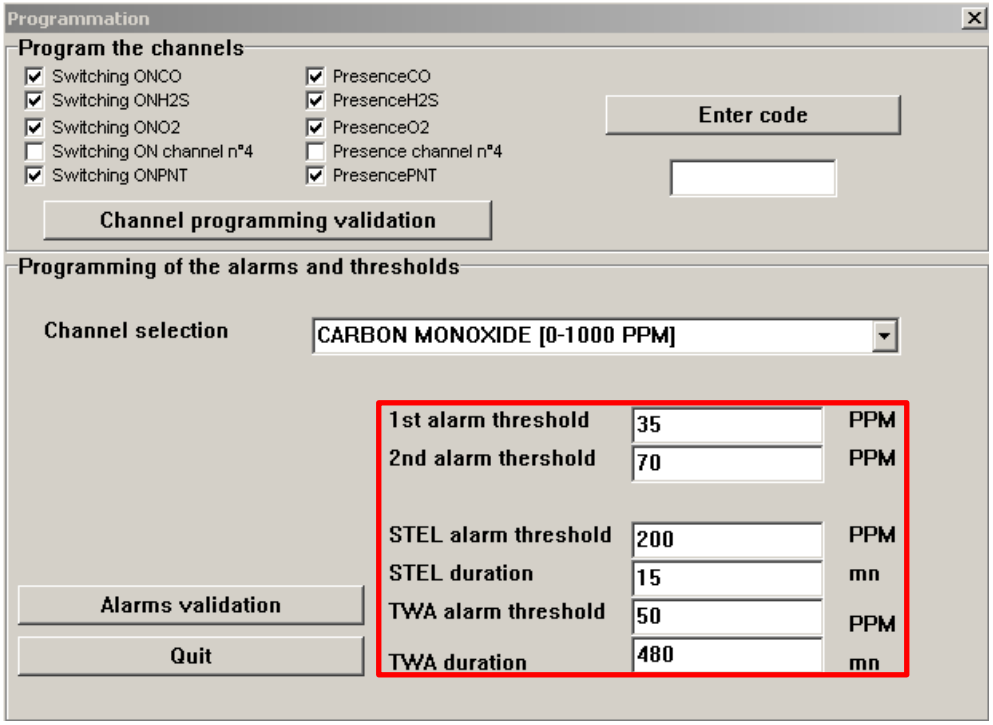
BM25 Channel Selection



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Channel Selection – Roll the mouse over the sensor and click the one you wish to change.

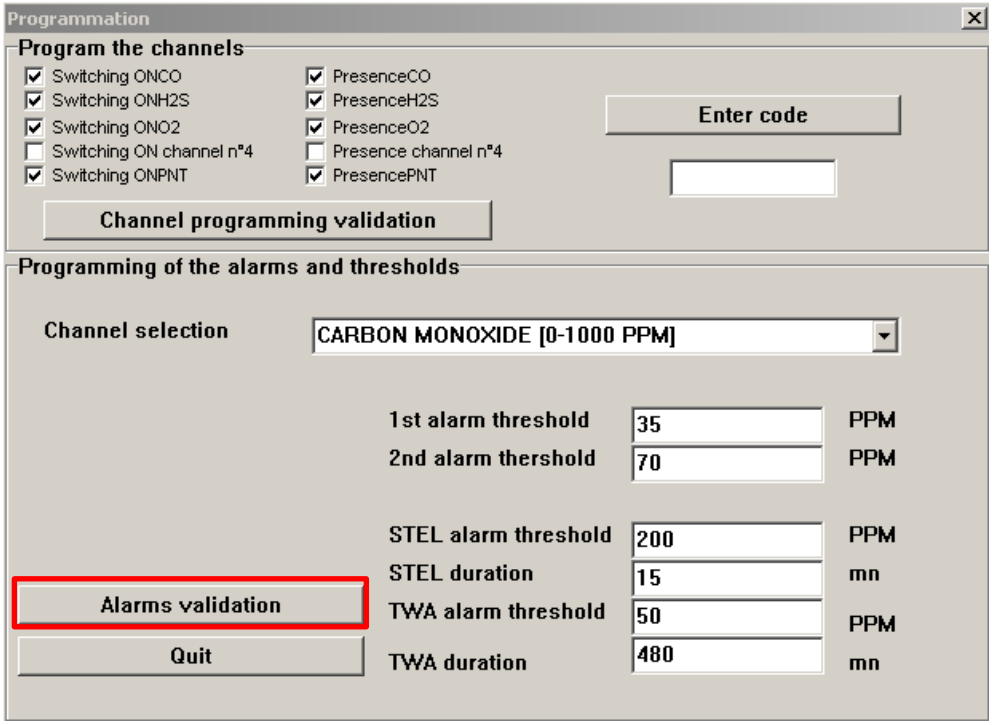
BM25 Channel Selection



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Channel Selection – The user can now simply type in the new alarm set-points as well as TWA and STEL duration of choice.

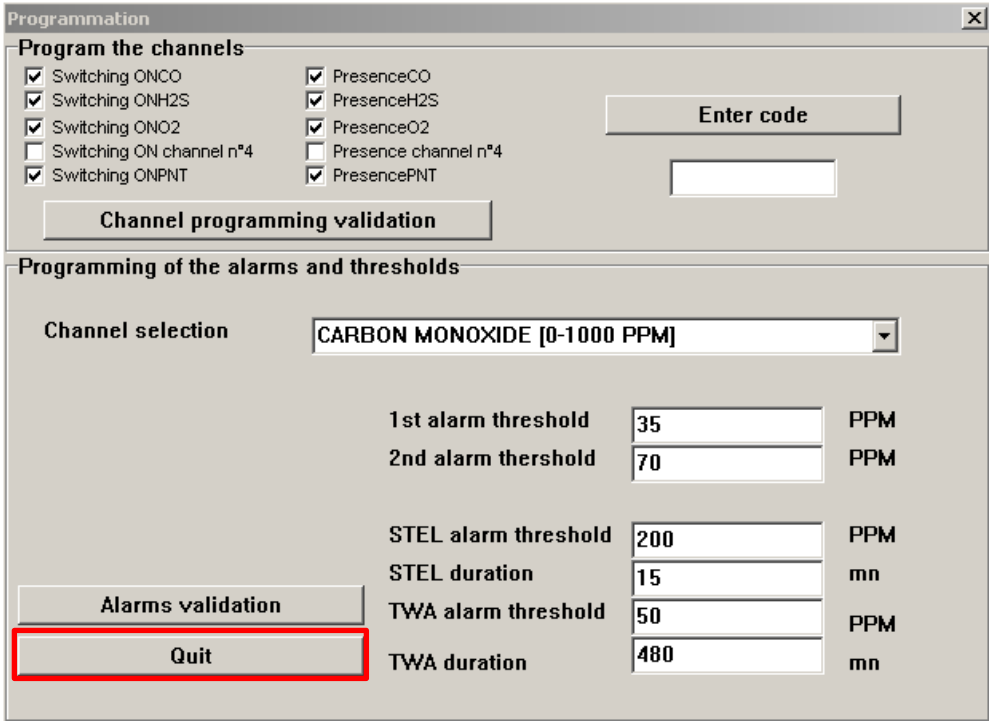
BM25 Channel Selection



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Channel Selection – The user must click on Alarm validation for these changes to take effect.

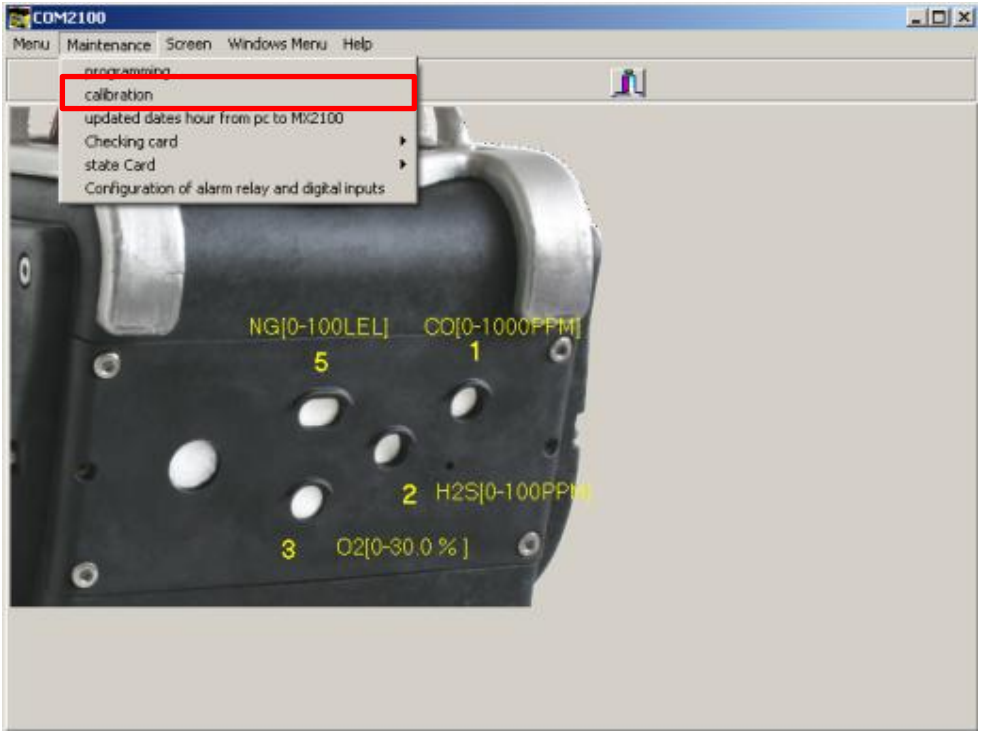
BM25 Channel Selection



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Quit – Clicking Quit will exit the user back to the main screen.

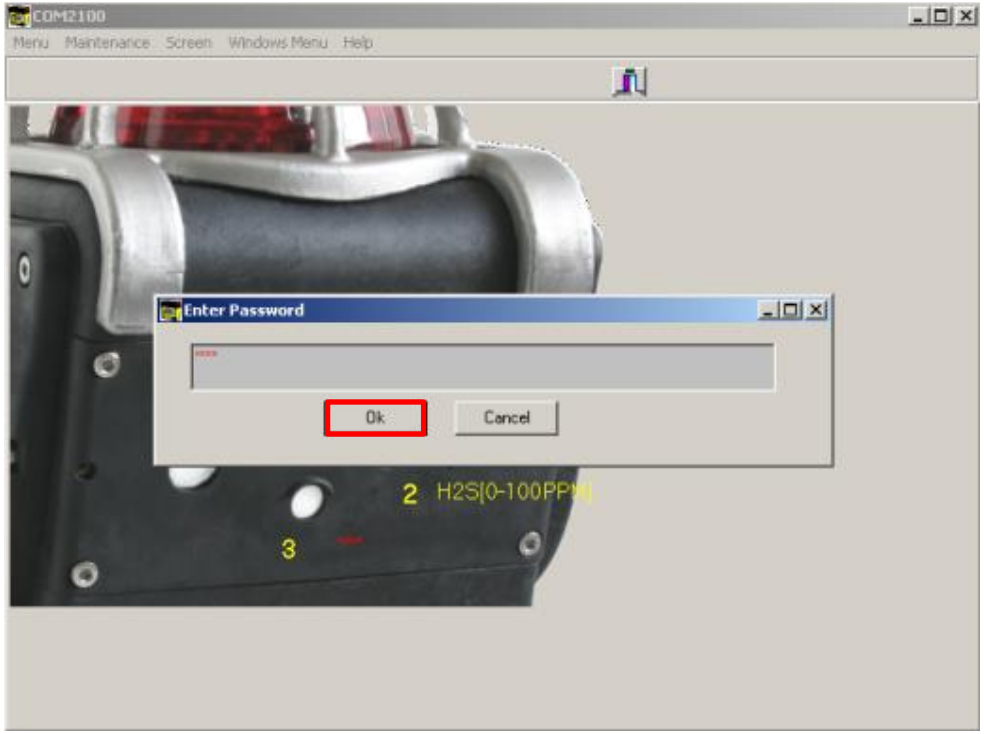
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – This option allows the user to perform an automated calibration for each installed sensor.

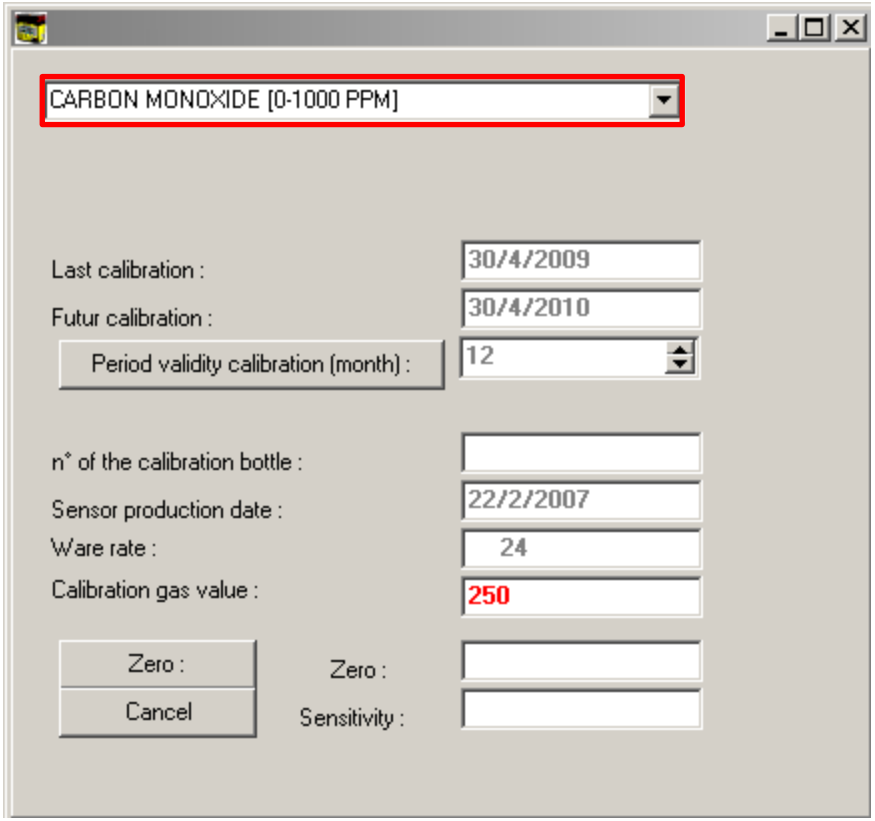
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – To gain access, type in “1000” and click OK.

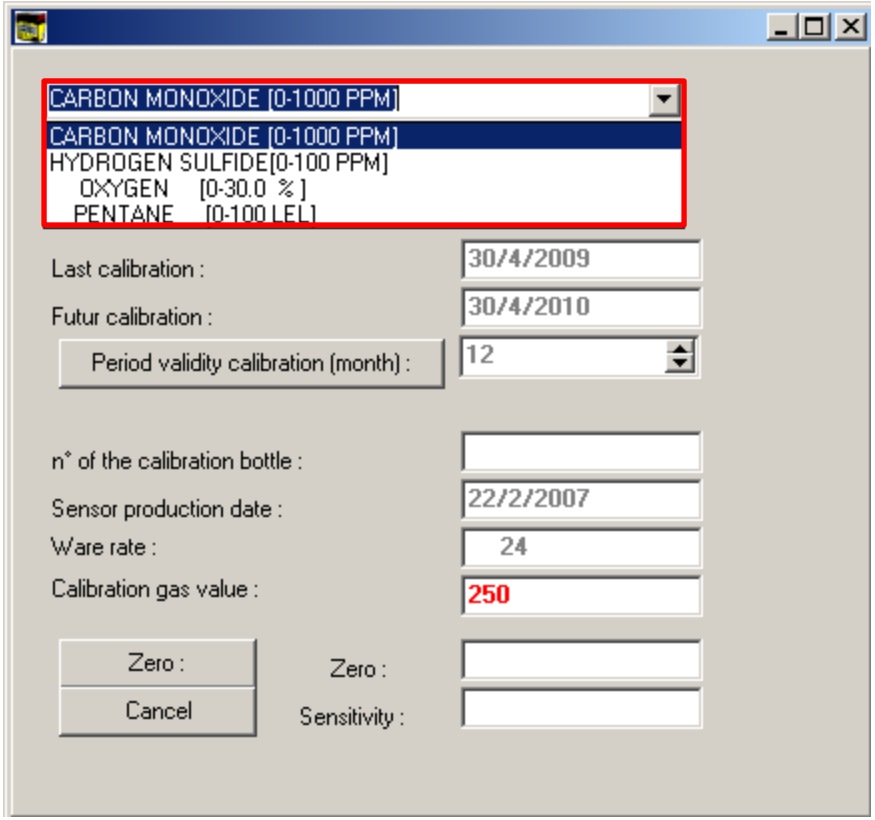
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – To calibrate a sensor first click on the sensor dropdown box.

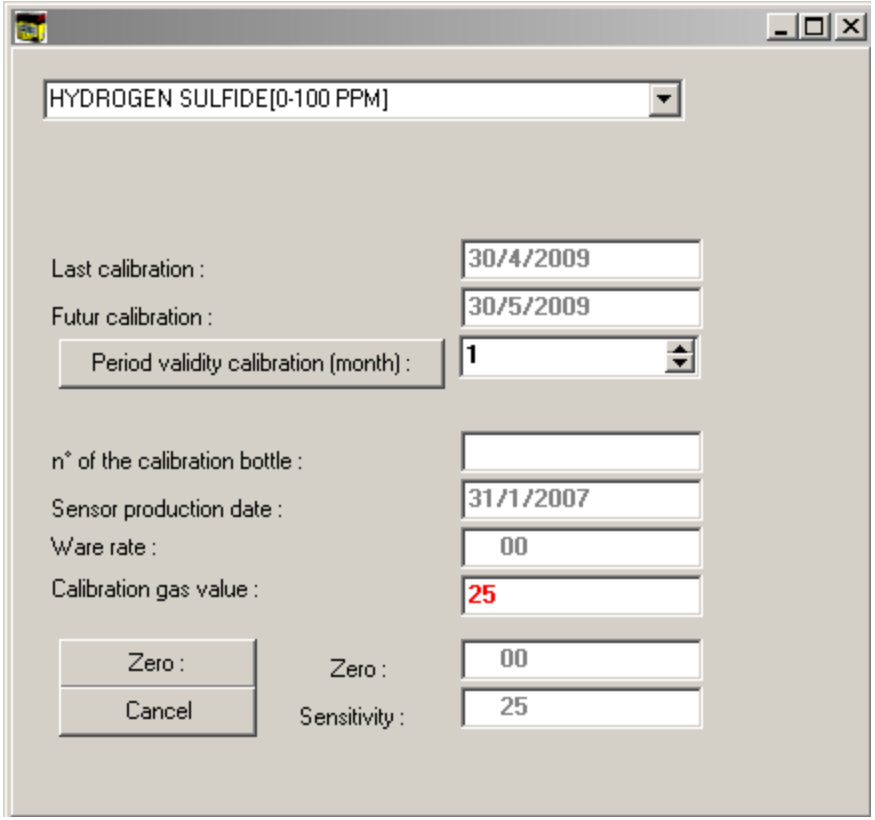
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – The user can now select the sensor to be calibrated by rolling the mouse and clicking on the sensor type.

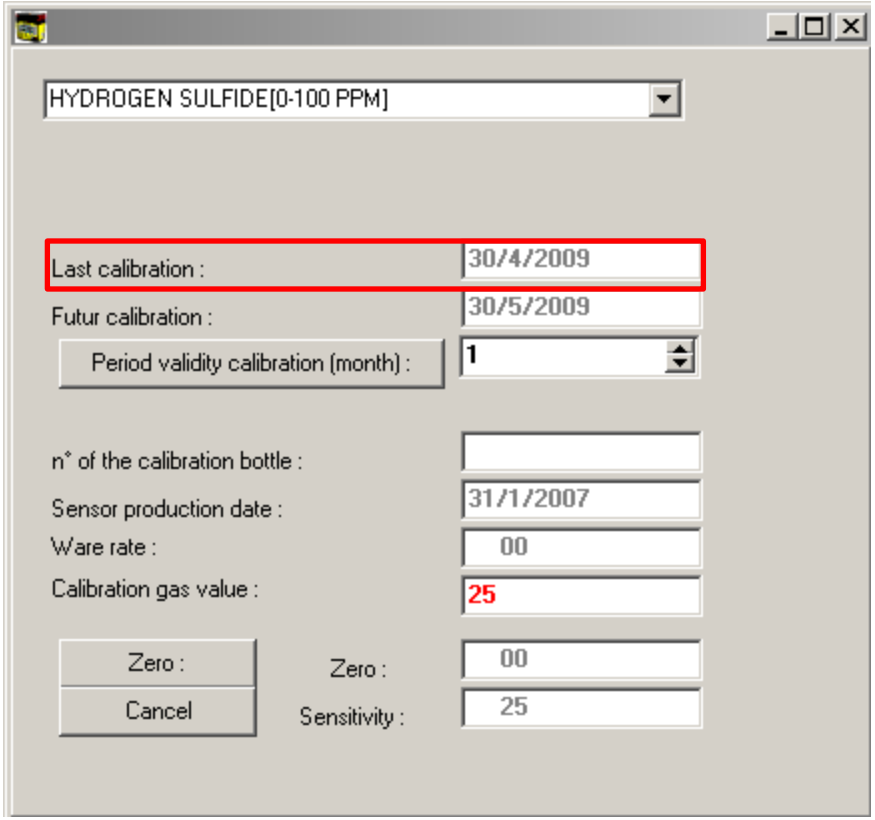
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

BM25 Calibration

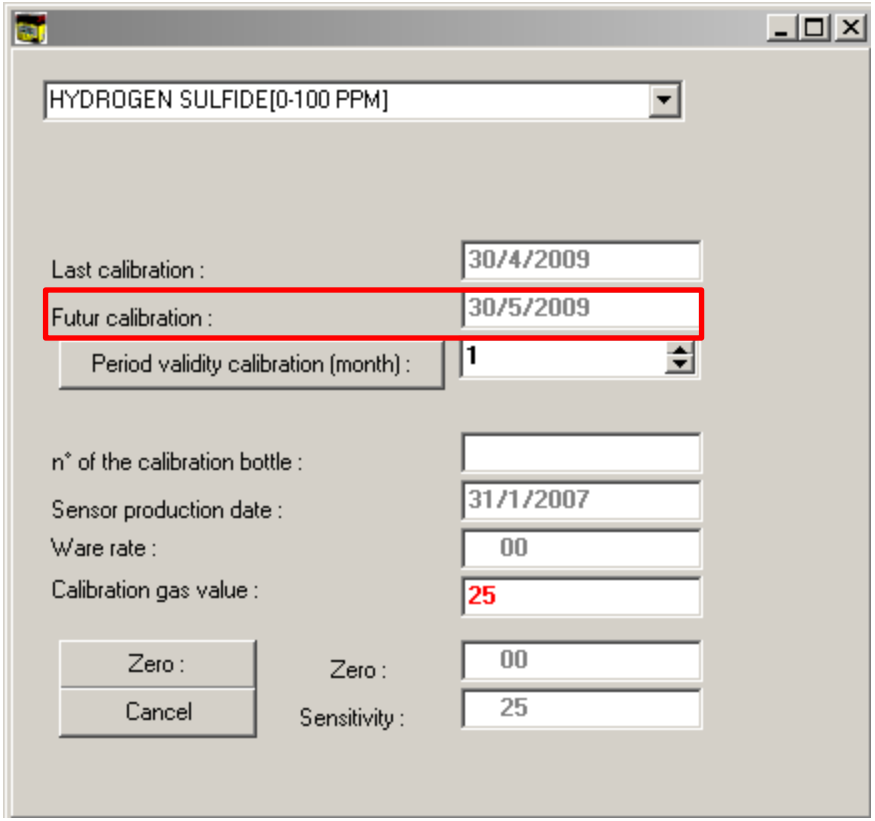


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

Last Calibration Date.

BM25 Calibration



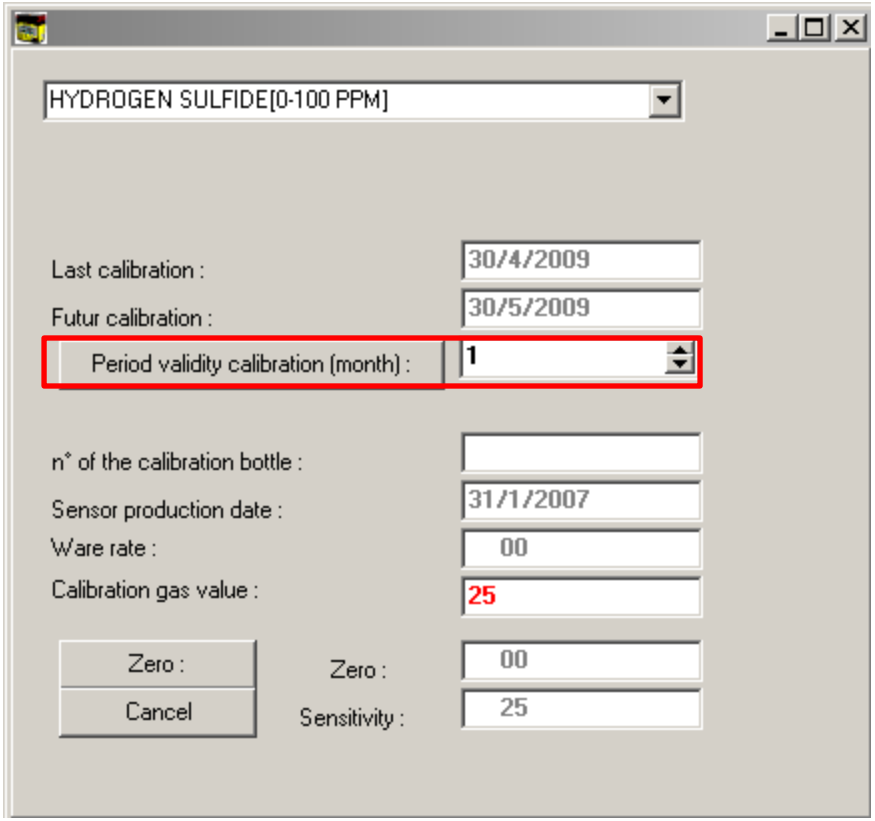
Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

Last Calibration Date.

Next Calibration Date.

BM25 Calibration

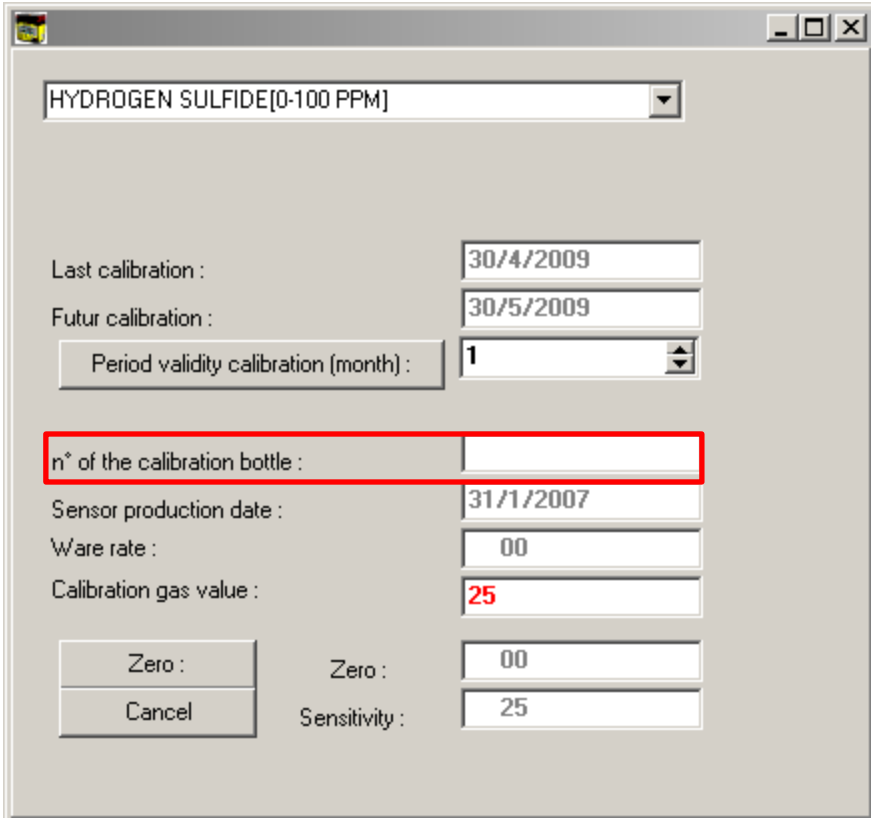


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

View and change Calibration Frequency

BM25 Calibration

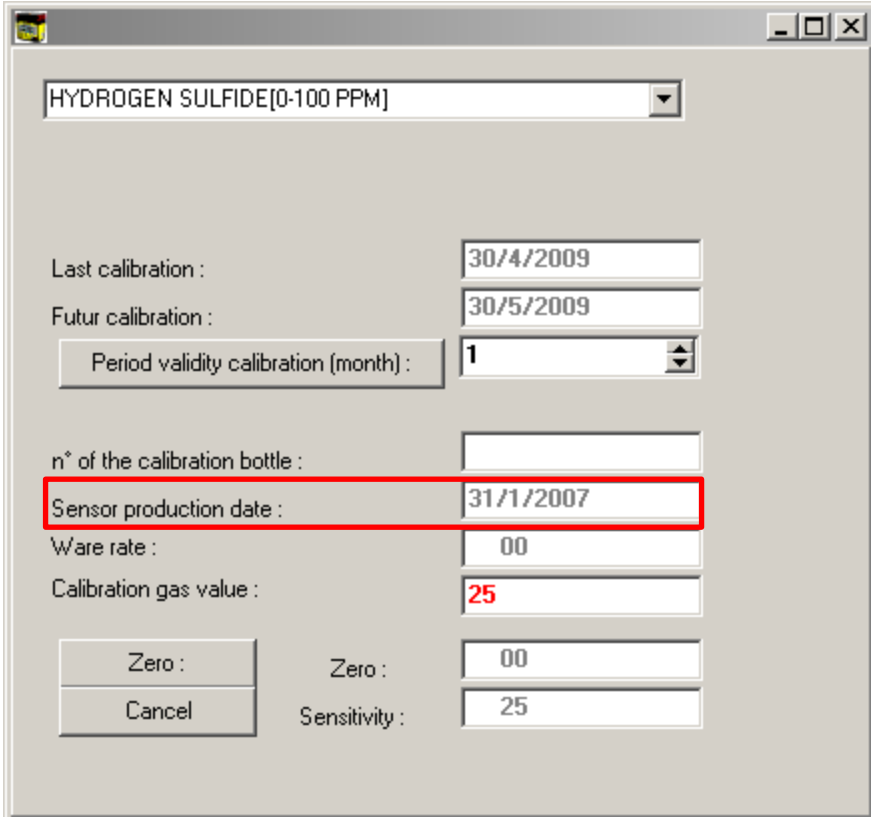


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

The user can type in the calibration cylinder Lot Number.

BM25 Calibration

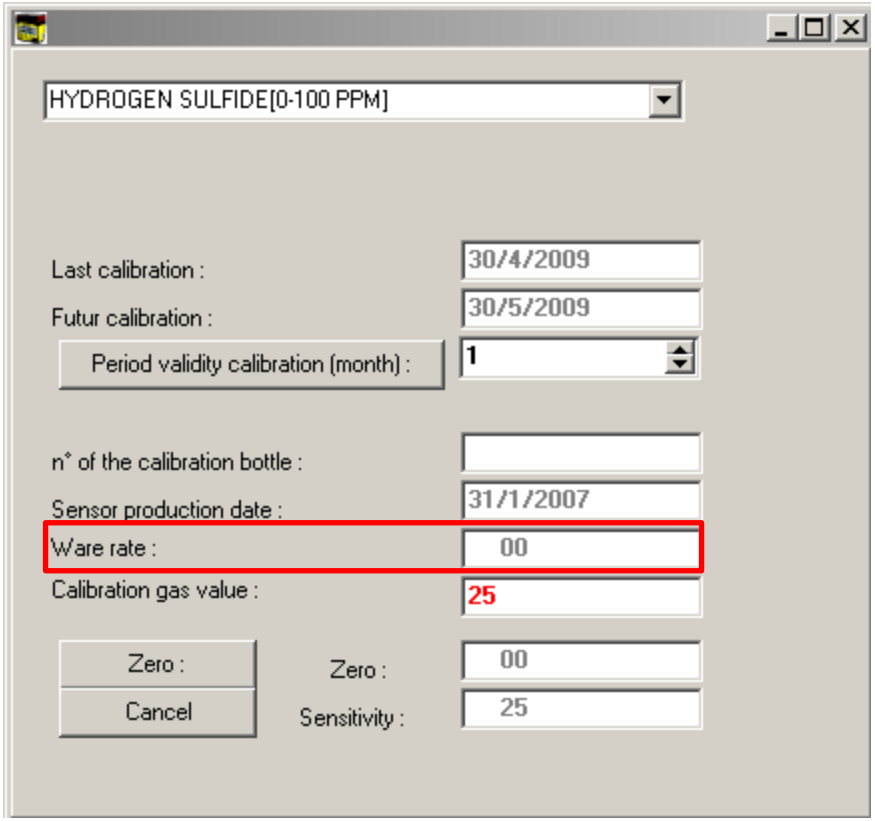


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

The sensor's manufacturing date.

BM25 Calibration



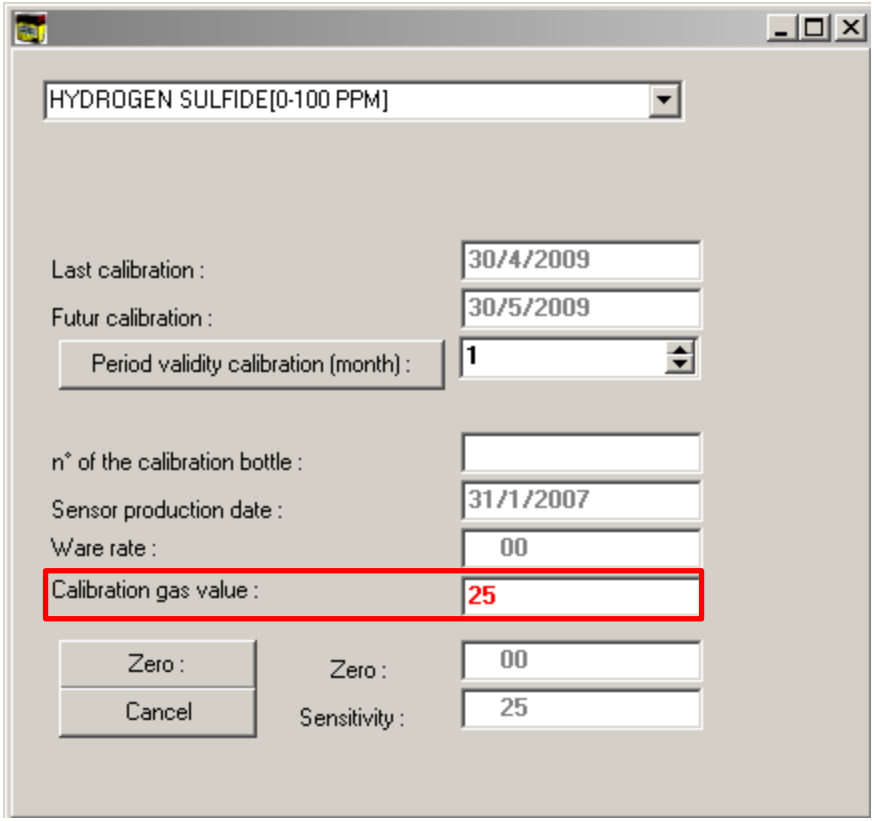
Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

The sensor's manufacturing date.

The Ware rate.

BM25 Calibration



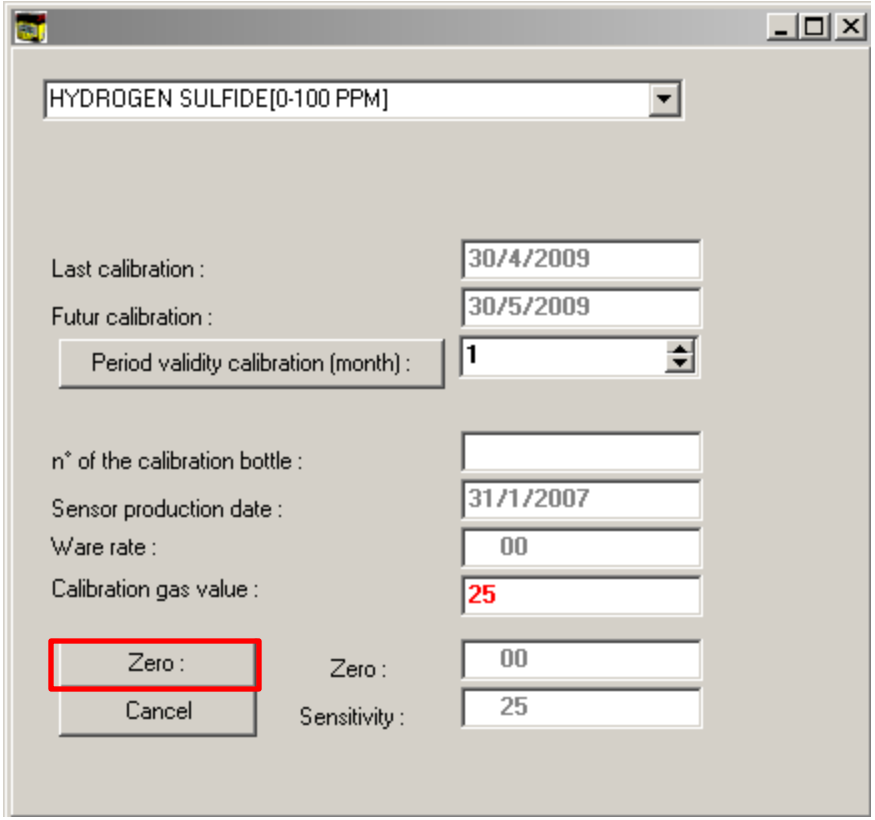
Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – From this screen the user will see:

Cal gas concentration can be typed in if using a different concentration.

Calibration gas concentration must be between 15% and 100% of the sensor range.

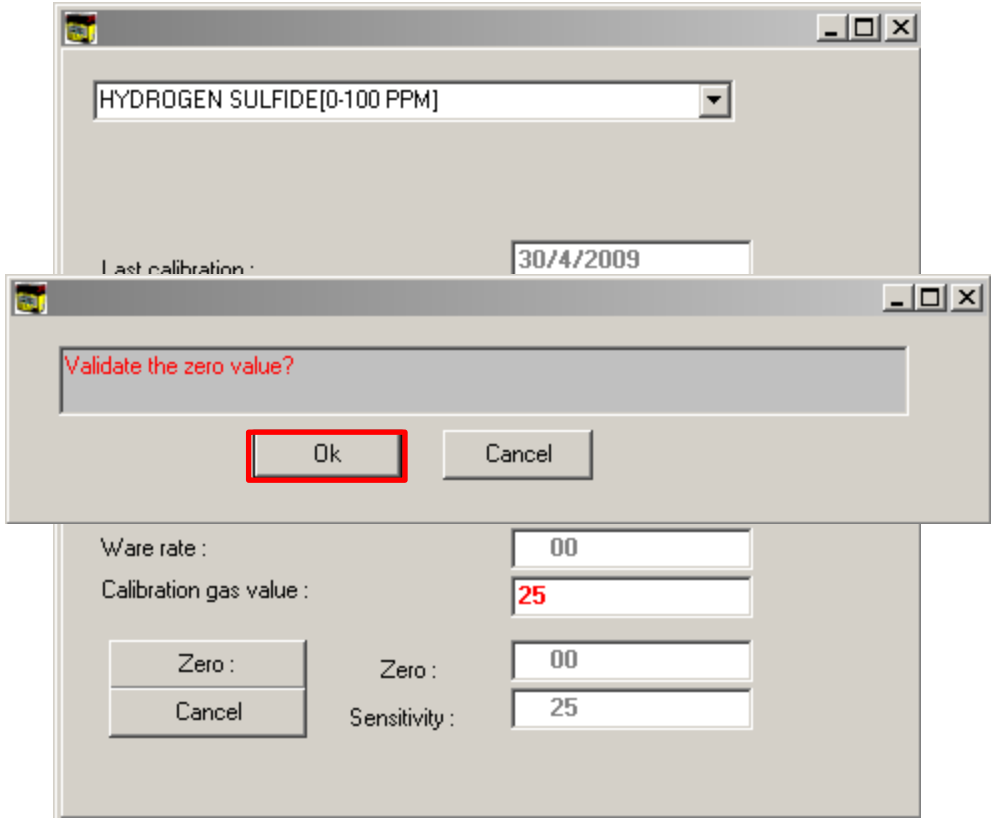
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – To calibrate this sensor first click on the Zero button.

BM25 Calibration

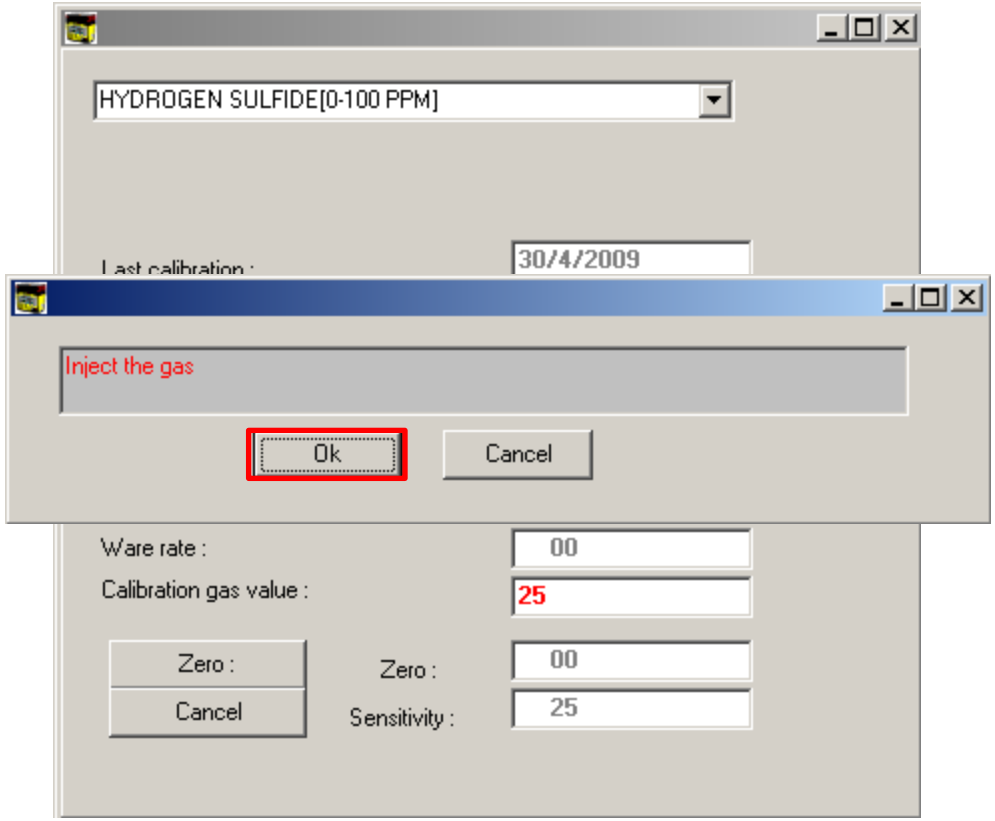


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – To calibrate this sensor first click on the Zero button.

Press the OK to confirm the zero value.

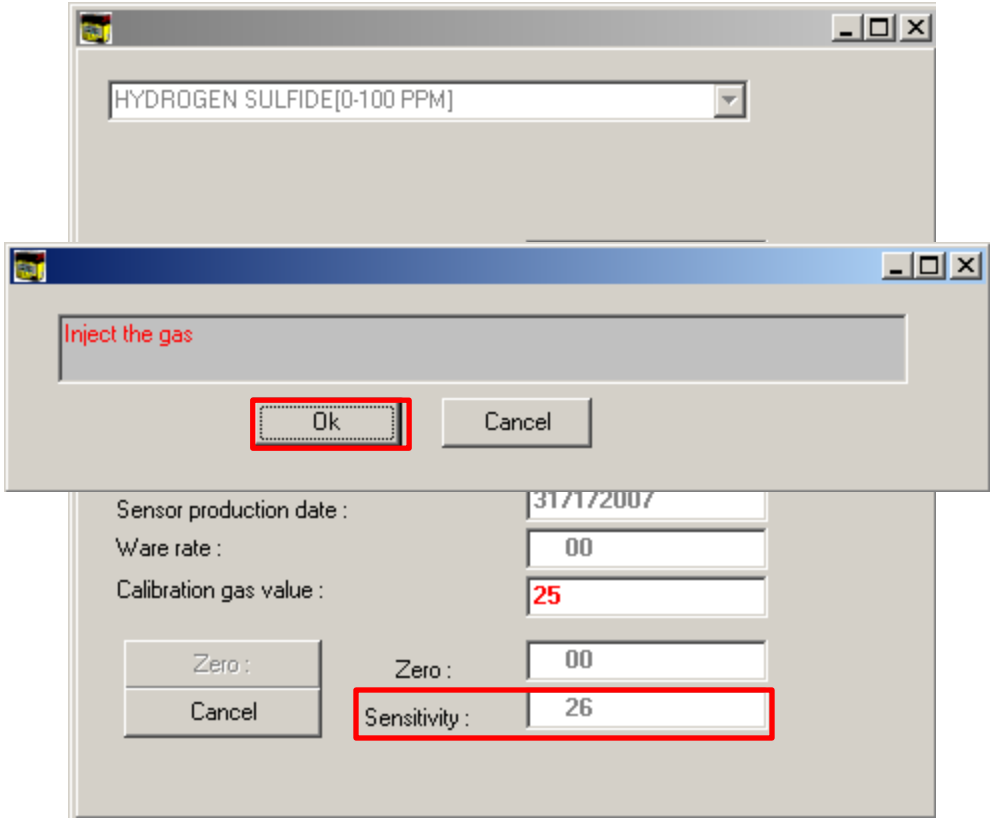
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – At this point apply the proper calibration gas to the BM25 and click OK.

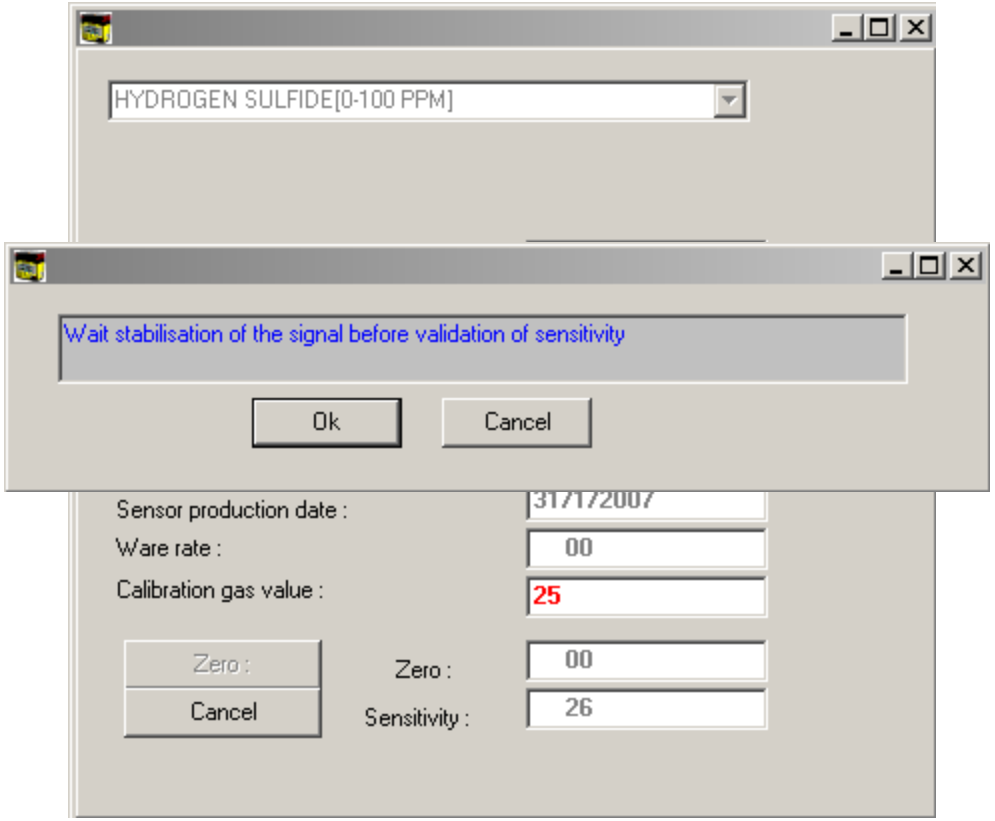
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – Watch the Sensitivity level and when stabilized, after two minutes, click on the OK button.

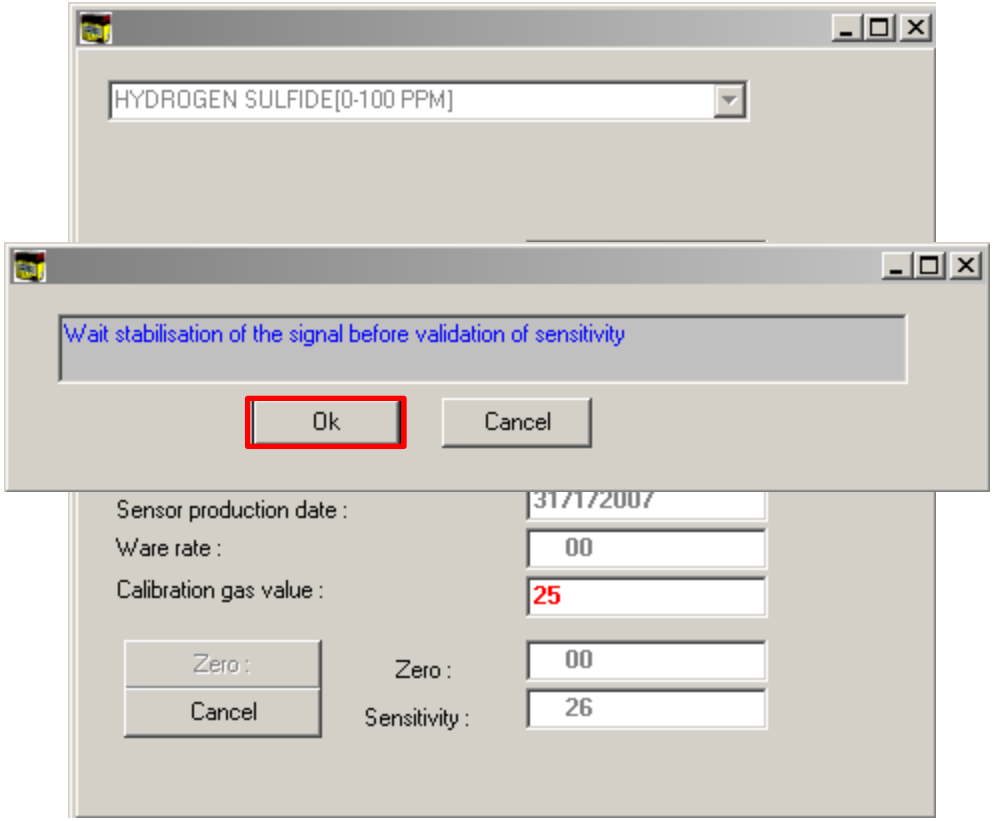
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – The software will remind the user to wait until sensor full stabilization.

BM25 Calibration

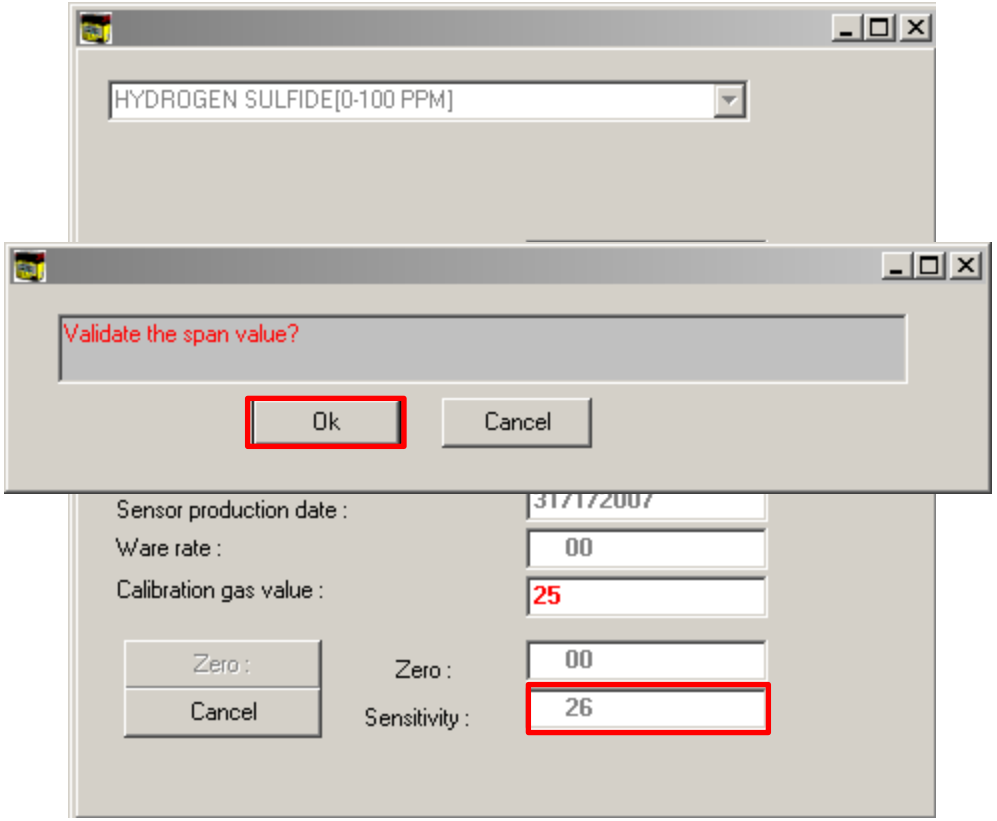


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – The software will remind the user to wait until sensor full stabilization.

Then click the OK button.

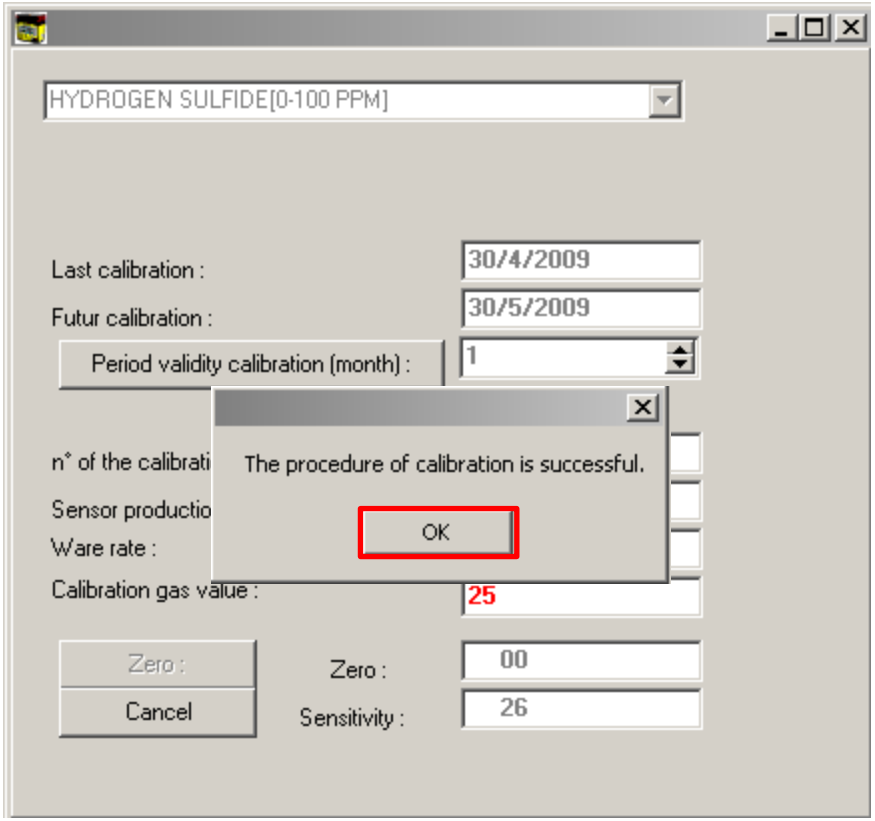
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – The user can validate the span then click OK to confirm.

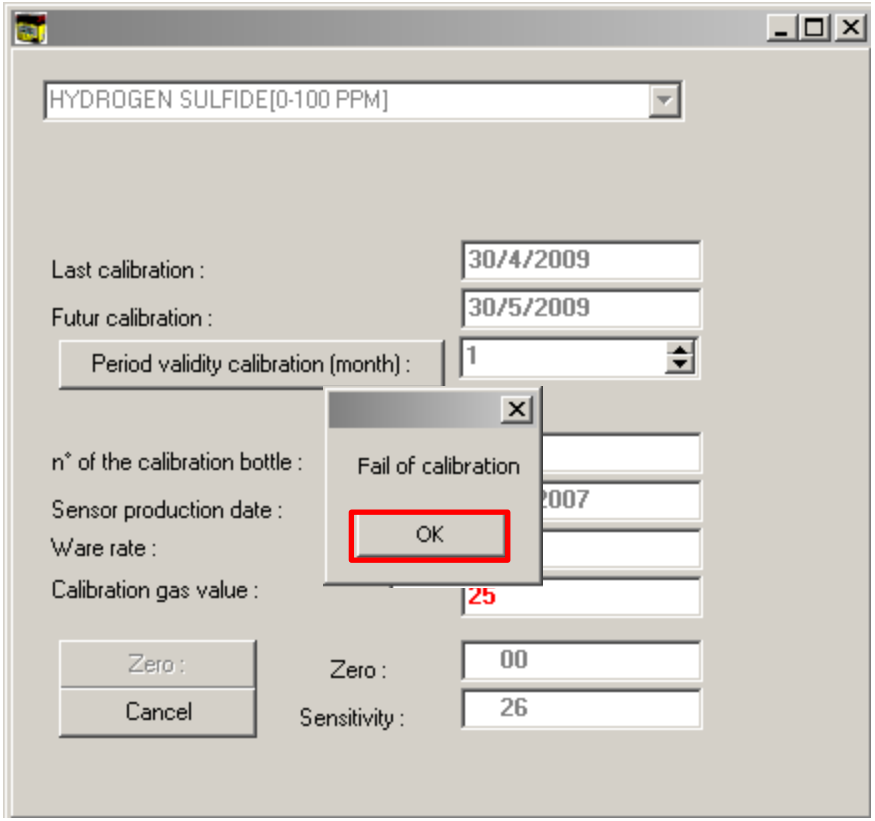
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – If the calibration was successful, the user will receive a prompt indicating the same. Click on OK to confirm.

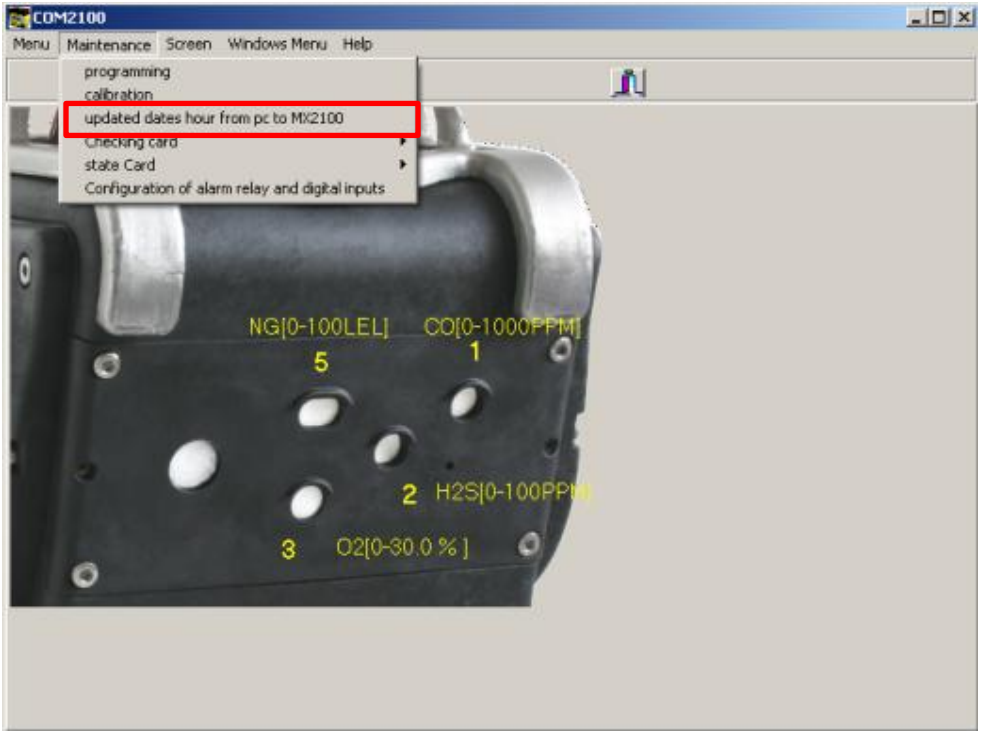
BM25 Calibration



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Calibration – If the calibration was unsuccessful, the user will receive a prompt indicating the same. Click on OK to confirm.

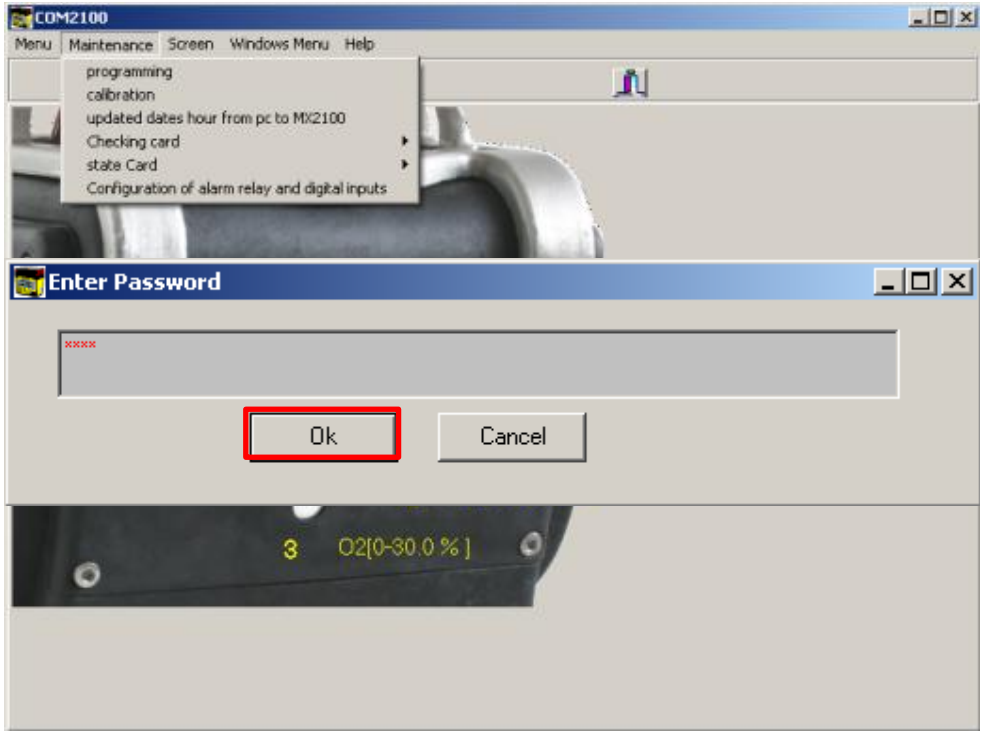
BM25 Setting Date & Time



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Updating Dates hours from PC – If selected, this option allows the user to sync the BM25's time from their PC.

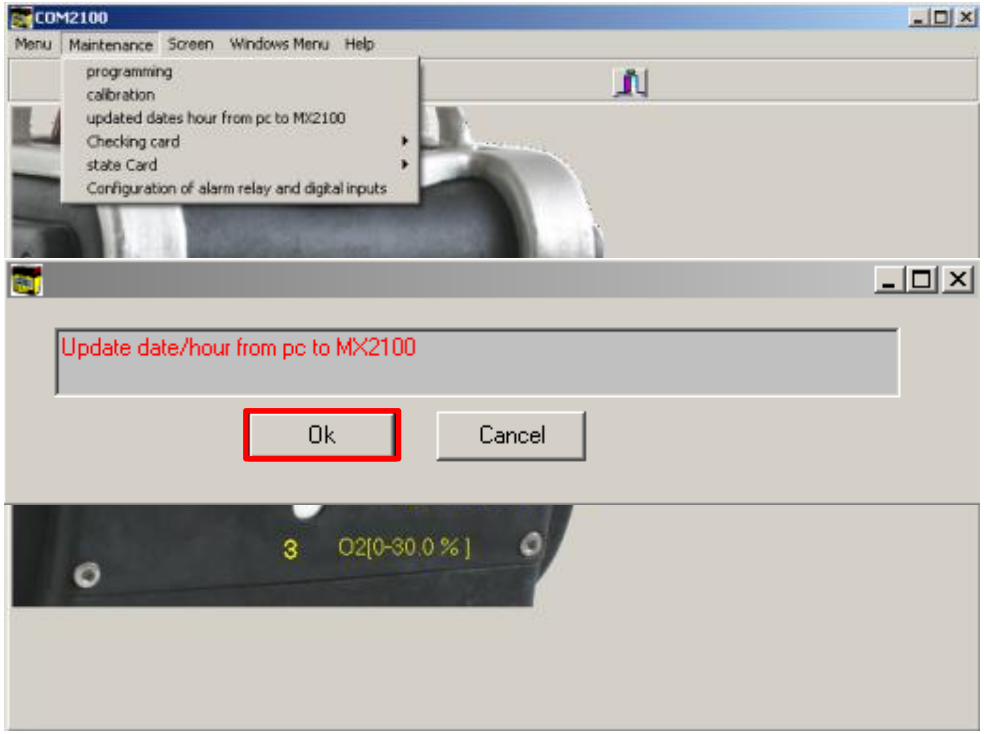
BM25 Setting Date & Time



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Updating Dates hours from PC – First, type in “1000” as the password then click OK to accept.

BM25 Setting Date & Time

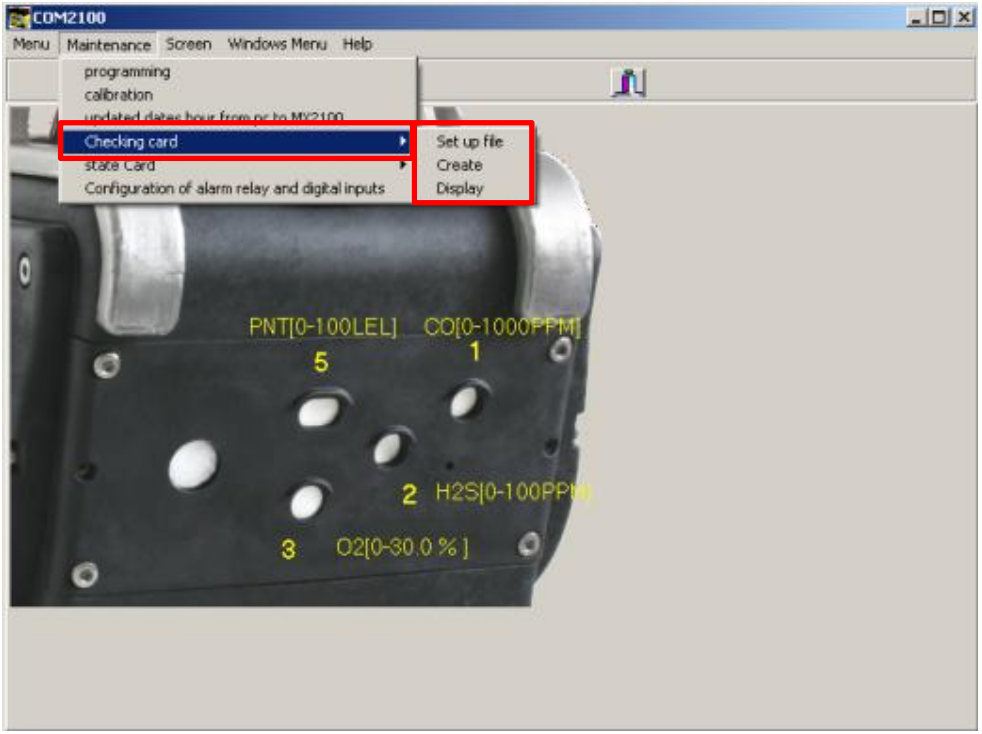


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Updating Dates hours from PC – First, type in “1000” as the password then click OK to accept.

Click OK to confirm.

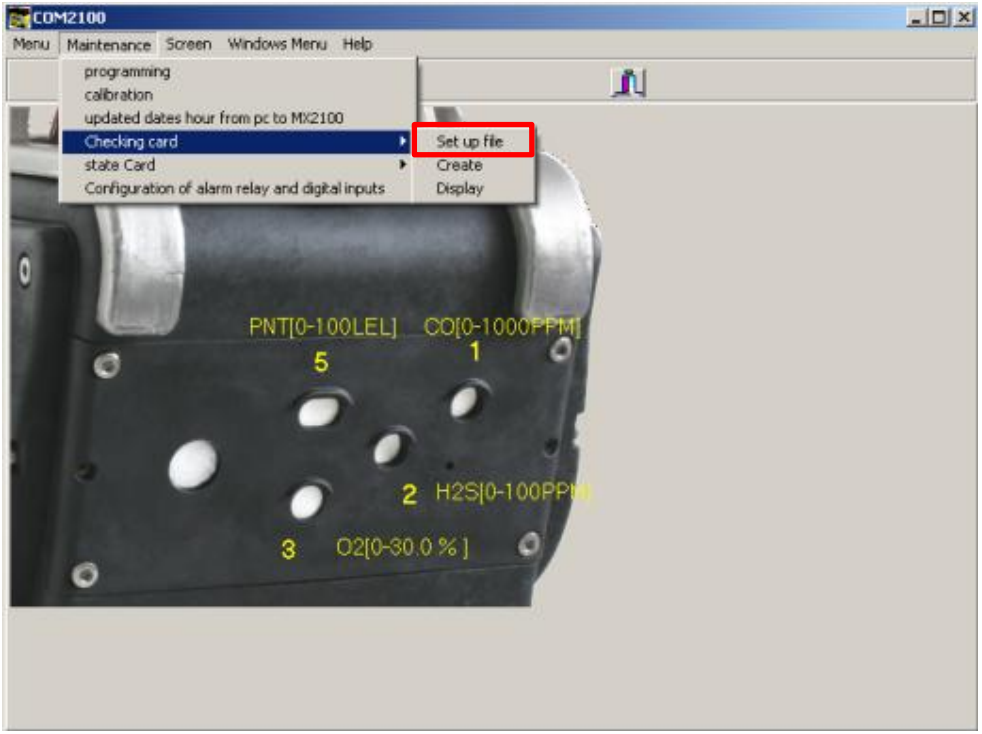
BM25 Checking Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Checking Card – This option allows the user to set up, create and display a calibration certificate from the last calibration performed on the BM25.

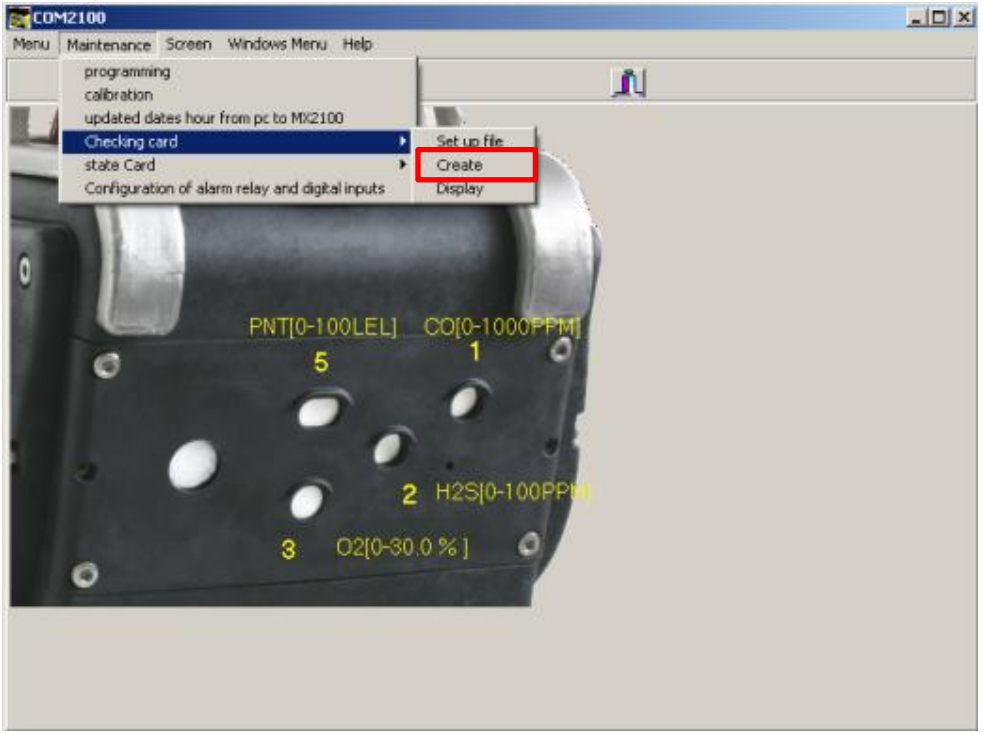
BM25 Checking Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Checking Card – To build your calibration certificate, the user must first select Set up file. This will allow the user to fill in the fields with his personal information.

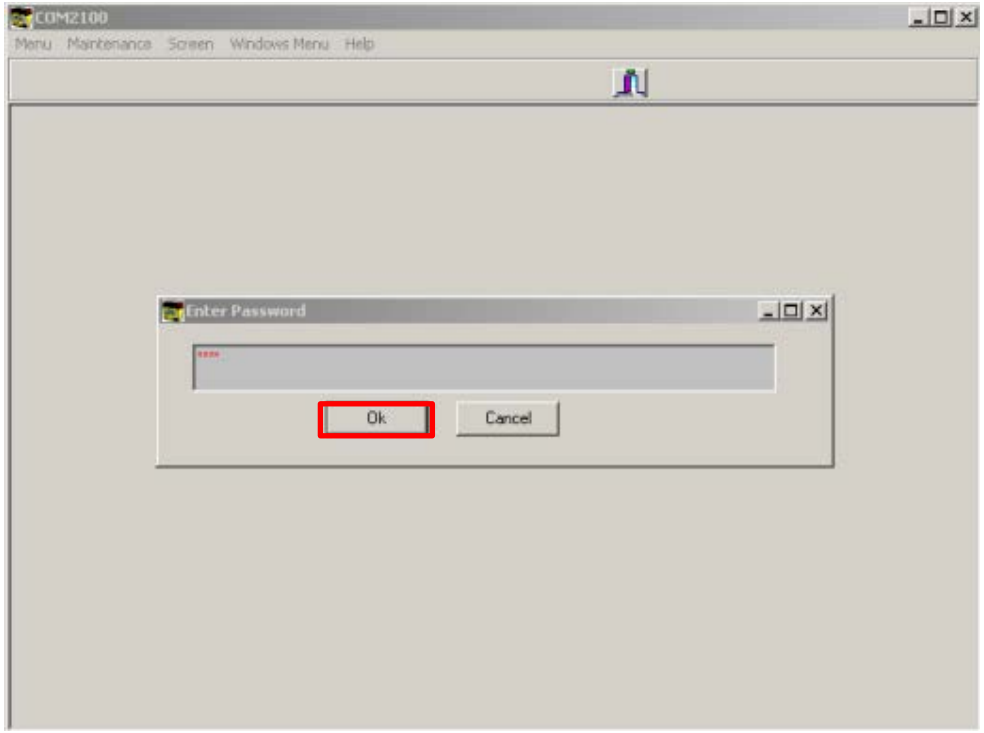
BM25 Checking Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Create – To build your calibration certificate, the user must now create the file.

BM25 Checking Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Create – Type in “1000” for your password and click OK to accept.

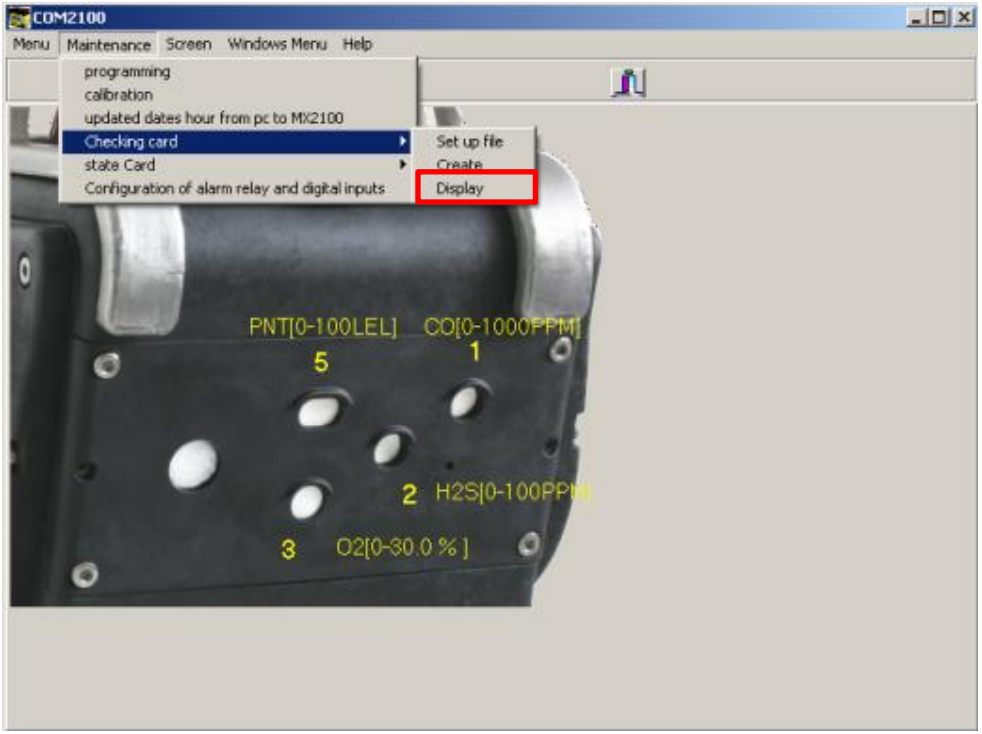
BM25 Checking Card

Access code :	0018			
Battery change date :	23/3/2007			
Device serial number :	7082004			
Customer identification number:	7082004			
Vibrator :	No			
STEL/TWA :	Yes			
History reviews :	Yes			
Autozero Ch :	No			
2 levels low O2 :	Yes			
Ident :	Yes			
Interval between "confidence bleep" :	300			
Stabilisation :				
Date of production :	23/3/2007			
Chang gaz explo :	No			
Reverse display :	No			
Alarm display :	Yes			
Serial number diplay :	Yes			
Alarms reactivation:	Yes			
ON/OFF forbidden:	No			
Acknowledgment auto:	No			
Zero calibration:	No			
CHANNEL CONFIGURATION				
Gas detected :	CARBON MONOXIDE	HYDROGEN SULFIDE	OXYGEN	PENTANE
ON/OFF :	ON	ON	ON	ON
Short name :	CO	H2S	O2	PNT
Scale :	0-1000	0-100	0-30.0	0-100
Unit :	PPM	PPM	%	LEL
Sensor serial number :	7053051	7031004	7078035	7081007
high alarm :	70	20	17	20
low Alarm :	35	10	19	10
Calibration gas :	250	25	20.9	25
gas cylinder N° :			0	
STEL Alarm :	200	10	0	0
STEL Time :	15	15	0	0
TWA Alarm :	50	5	0	0
TWA Time :	480	480	0	0
Date of sensor production :	22/2/2007	31/1/2007	19/3/2007	22/3/2007
Measure before calibration :	262	26	20.9	
Measure after calibration :	250	01	20.9	
Instantaneous measures :	00	00	20.9	00
Last calibration date :	30/4/2009	30/4/2009	30/4/2009	9/4/2009
Futur calibration date :	30/4/2010	30/5/2009	30/5/2009	9/5/2009

Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Create – A new unit profile will be created and saved to the PC for viewing**.**

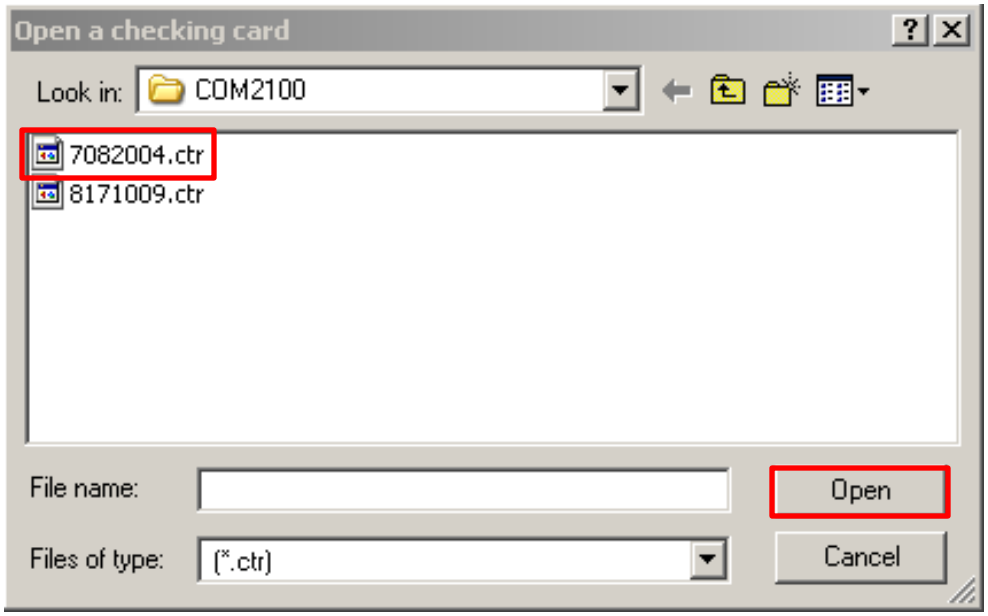
BM25 Checking Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Display – Clicking Display will allow the user to select which calibration certificate file to view.

BM25 Checking Card

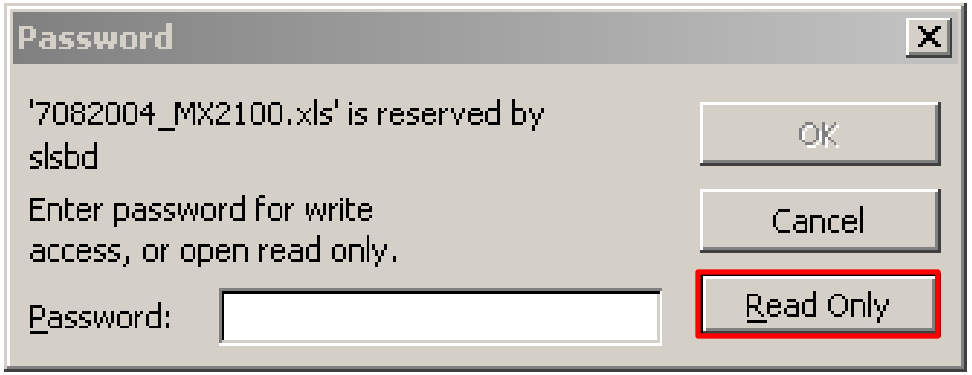


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Display – Choose the calibration certificate file then click open.

Note: the file name is based off the unit's S/N.

BM25 Checking Card

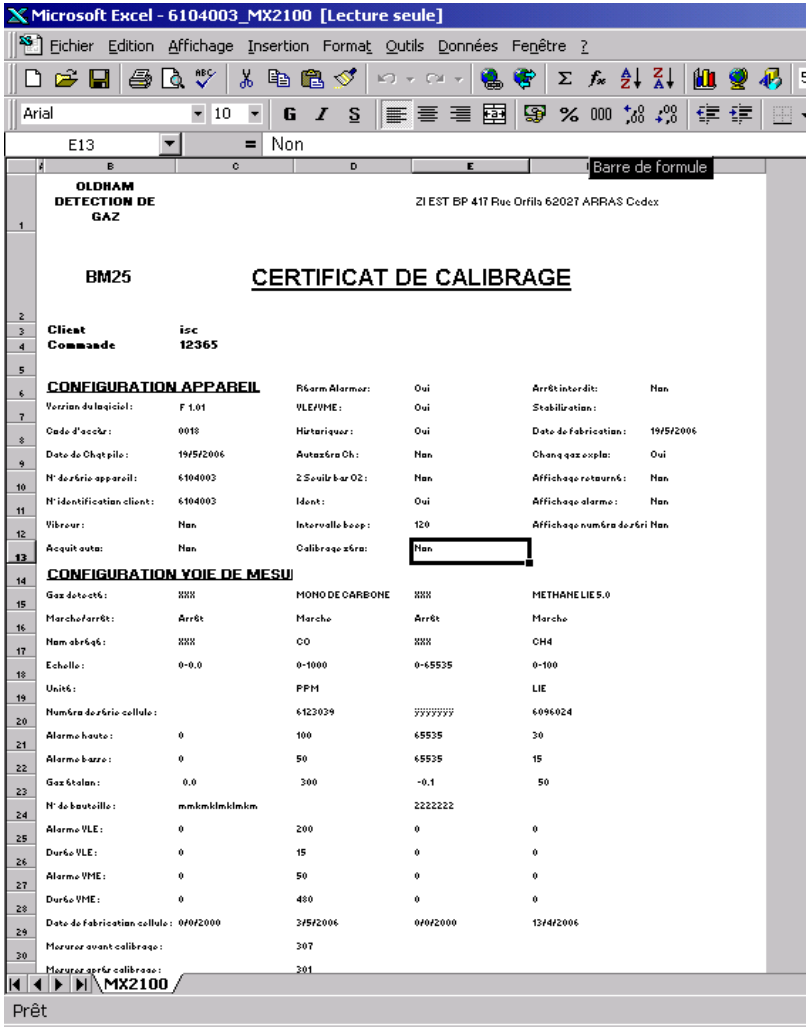


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Display – Choose the calibration certificate file then click open.

Click Read Only to open the calibration certificate.

BM25 Checking Card



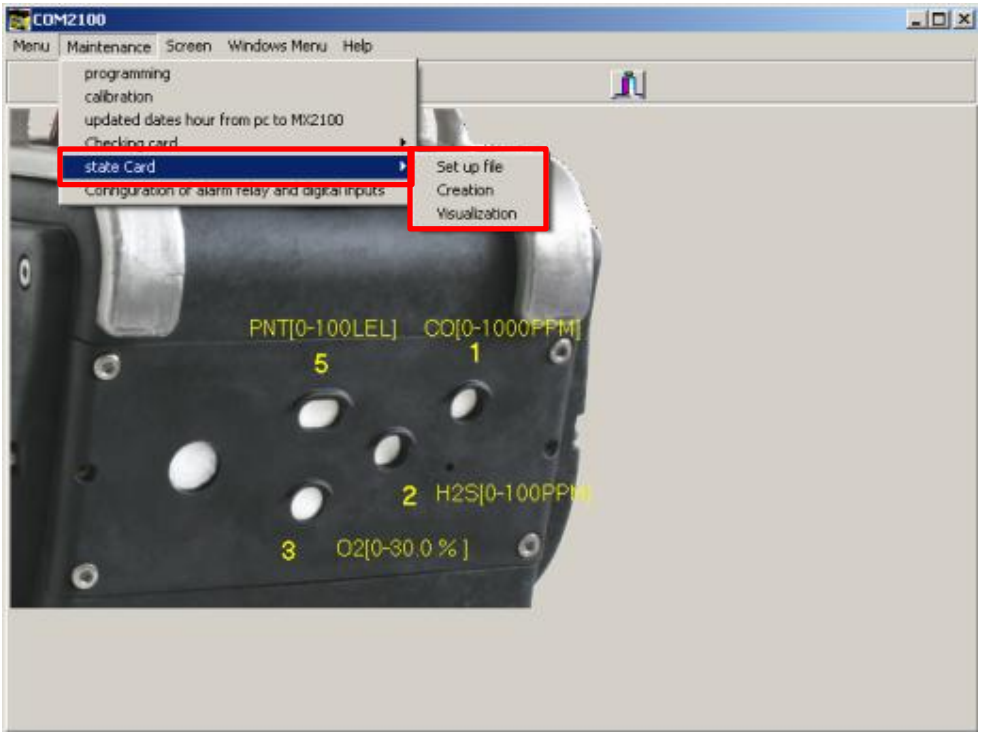
Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Display – Choose the calibration certificate file then click open.

Click Read Only to open the calibration certificate.

The calibration certificate is now open

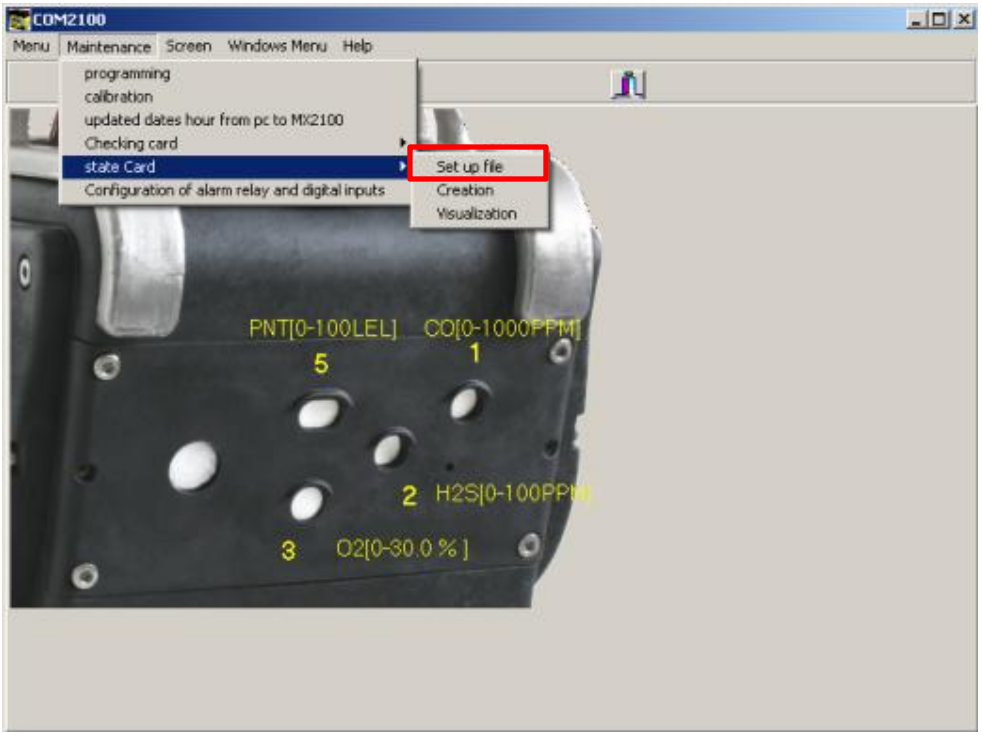
BM25 State Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

State Card – This option allows the user to set up, create and display the BM25's current configuration.

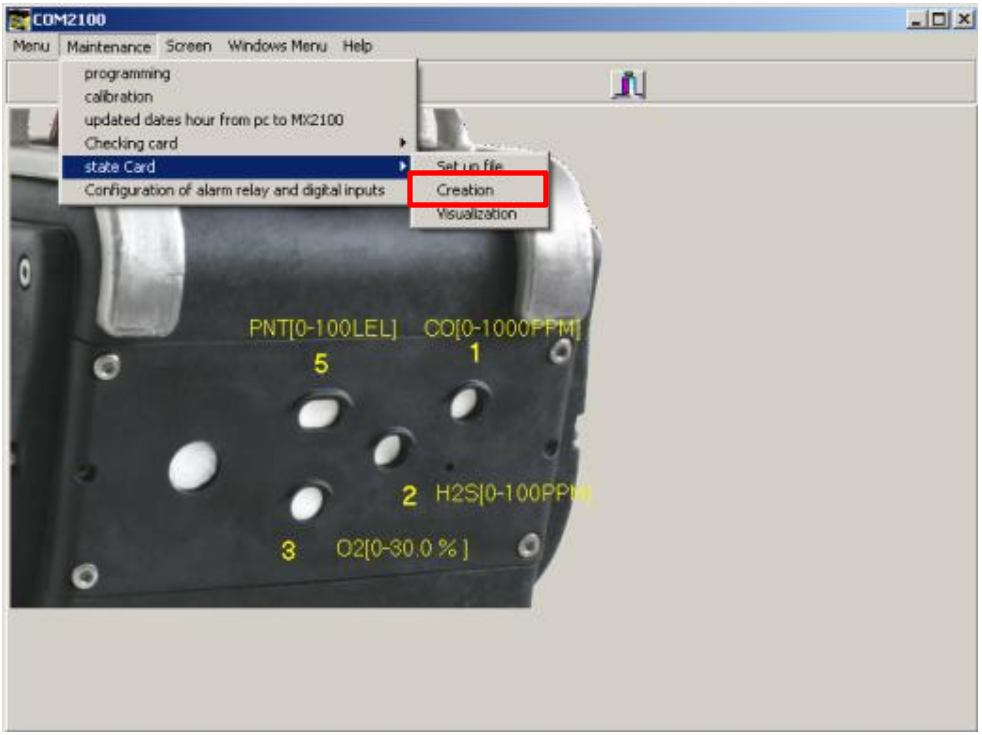
BM25 State Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

State Card – To create your BM25 status report, the user must first select Set up file. This will allow the user to fill in the fields with his personal information

BM25 State Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Creation – To build your BM25 configuration, the user must now create the file.

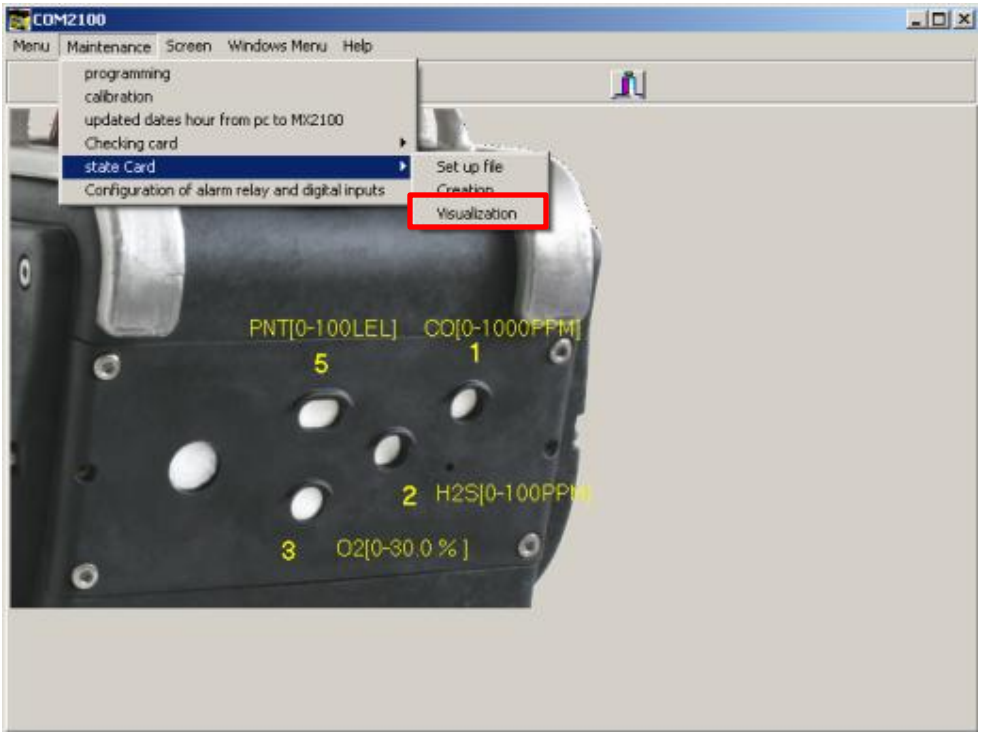
BM25 State Card

Software-version	USA 1.03			
Battery change date :	23/3/2007			
Device serial number :	7082004			
Customer identification number :	7082004			
Vibrator :	No			
STEL/TWA :	Yes			
Histograms :	Yes			
Autozero Ch :	No			
2 levels low O2 :	Yes			
Ident :	Yes			
Interval between " confidence bleep" :	300			
Stabilization :				
Date of production :	23/3/2007			
Gas display at startup :	No			
Reverse display :	No			
Alarm display :	Yes			
Serial number display :	Yes			
Alarms reactivation :	Yes			
ON/OFF forbidden :	No			
Auto Acknowledgment :	No			
Zero Calibration :	No			
CHANNEL configuration				
Gas detected :	CARBON MONOXIDE	HYDROGEN SULFIDE	OXYGEN	PENTANE
ON/OFF :	ON	ON	ON	ON
Short name :	CO	H2S	O2	PNT
Scale :	0-1000	0-100	0-30.0	0-100
Unit :	PPM	PPM	%	LEL
Sensor serial number :	7053051	7031004	7078035	7081007
High Alarm :	70	20	17	20
Low Alarm :	35	10	19	10
Calibration gas :	250	25	20.9	25
Cylinder N° :			0	
STEL alarm :	200	10	0	0
STEL time :	15	15	0	0
TWA alarm :	50	5	0	0
TWA time :	480	480	0	0
Sensor production date :	22/2/2007	31/1/2007	19/3/2007	22/3/2007
Measure before calibration :				
Measure after calibration :				
Instantaneous measure :	00	00	20.9	00
Last Date of calibration :	30/4/2009	30/4/2009	30/4/2009	9/4/2009
Next calibration date :	30/4/2010	30/5/2009	30/5/2009	9/5/2009

Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Create – A new unit profile will be created and saved on the PC for viewing**.**

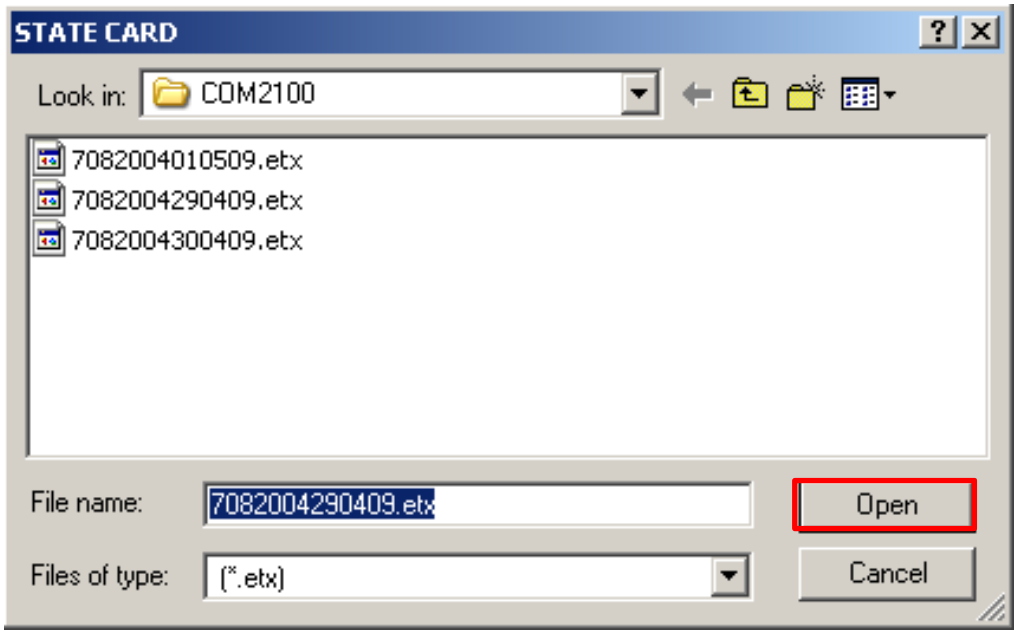
BM25 State Card



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Visualization – Through this the user can now view any of their BM25 configurations.

BM25 State Card

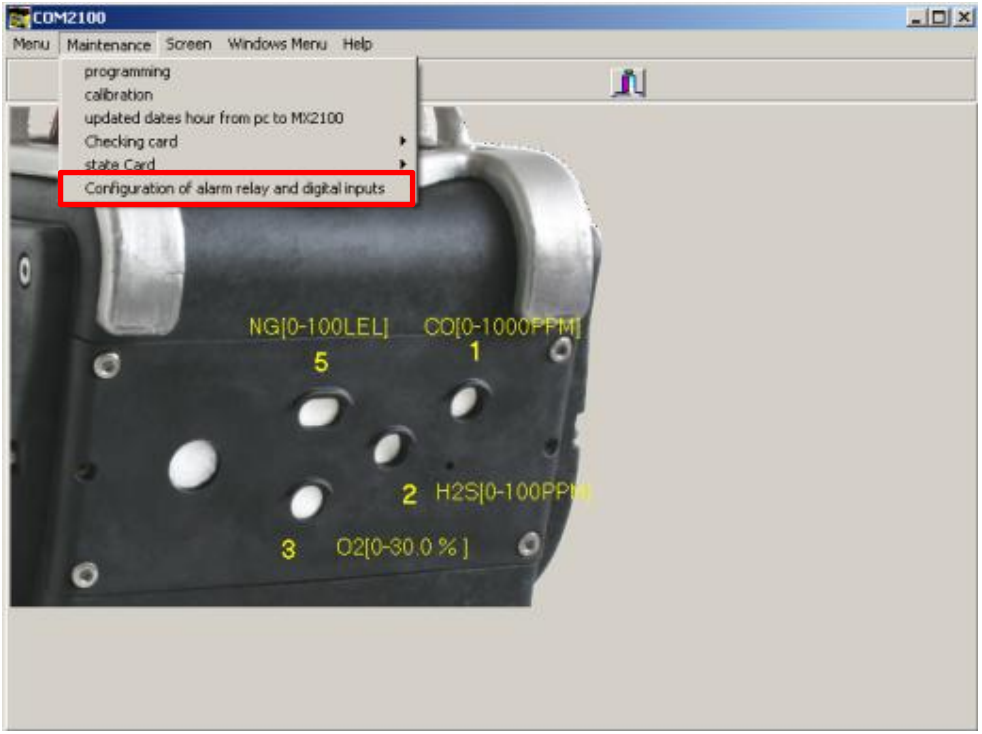


Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Visualization – To view a configuration, first click on the file. Then click Open.

Note: File name is based on the BM25's S/N.

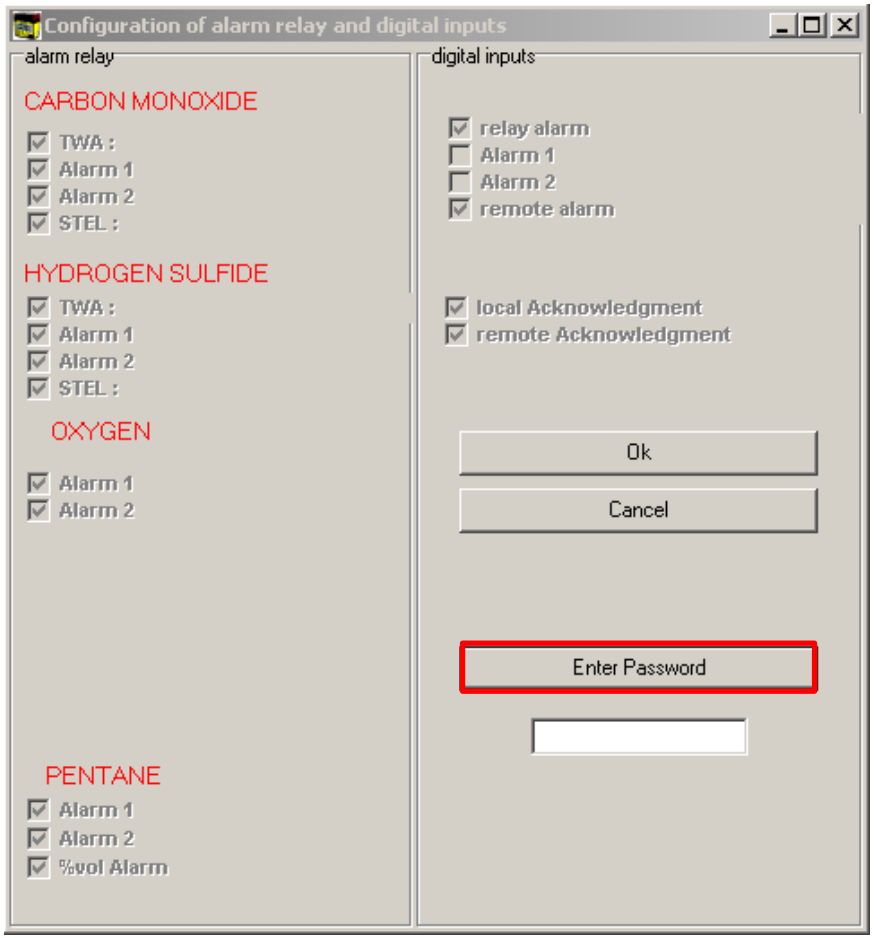
BM25 I/O Config



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Configuration of Output Alarm Relay and Digital Input – This option allows the user to configure the I/O connections found on the right side of the BM25.

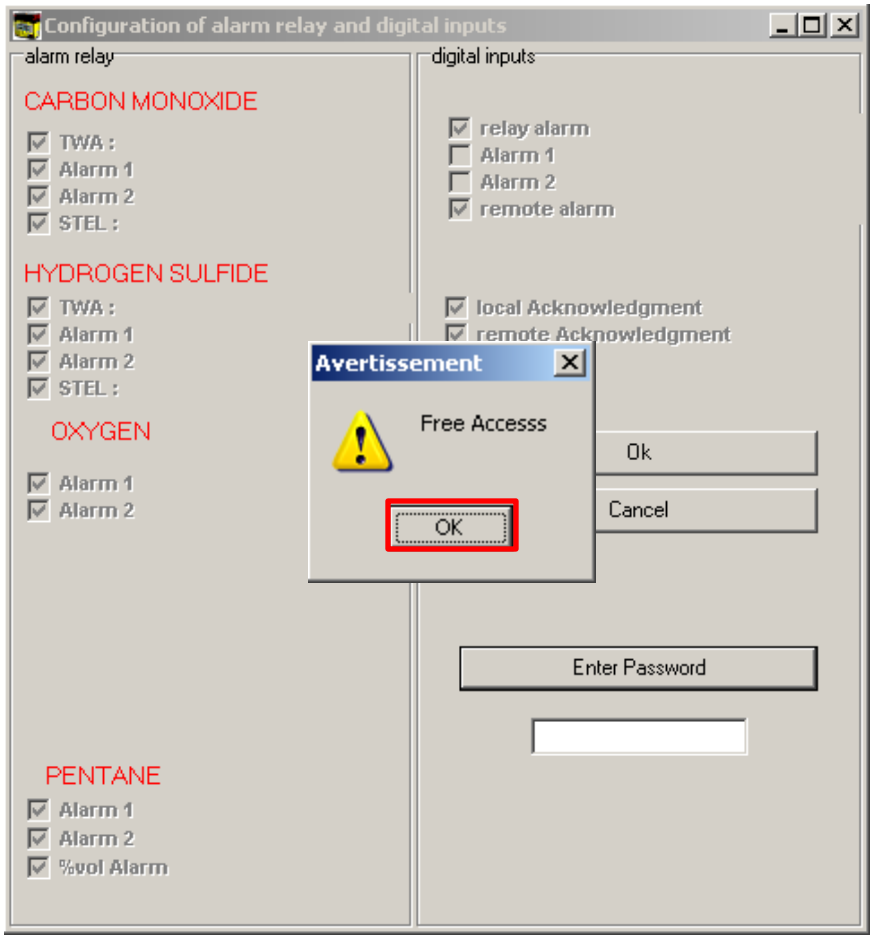
BM25 I/O Config



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Configuration of Output Alarm Relay and Digital Input – To gain access, the user must first enter the password of “1000” then click “Enter Password”.

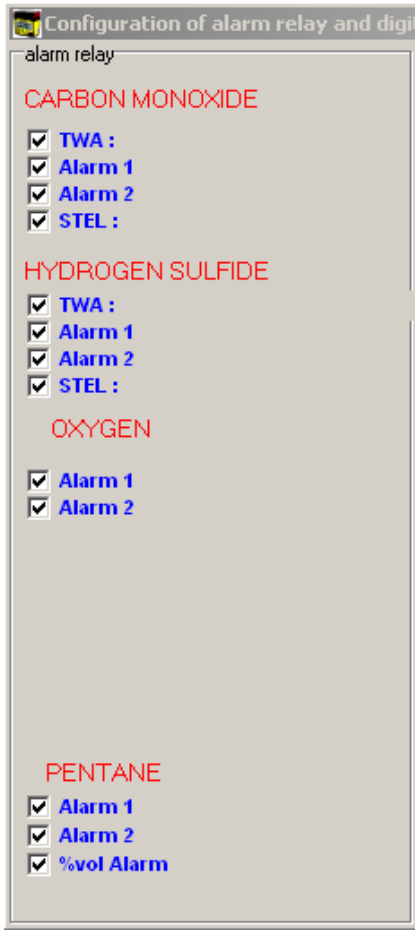
BM25 I/O Config



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Configuration of Output Alarm Relay and Digital Input – Click OK to acknowledge access.

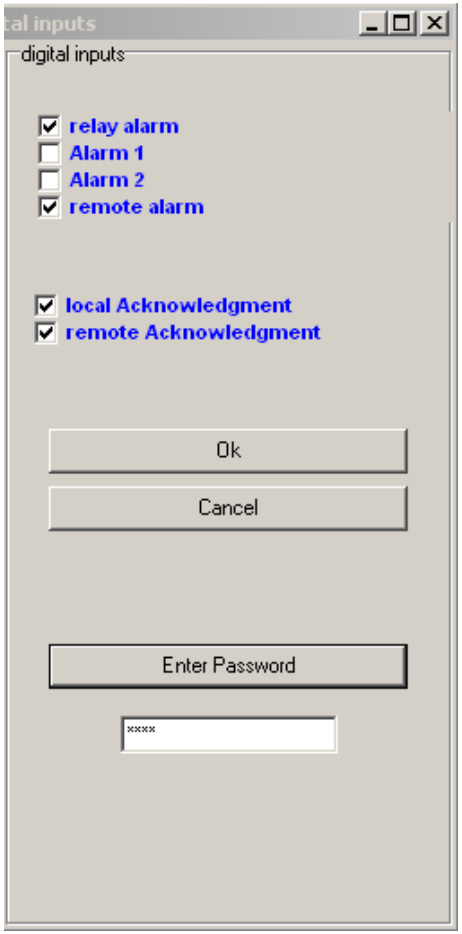
BM25 Alarm Relay Config



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Configuration of Alarm Relay – Through this screen the user can select the alarms available through the relay receptacle.

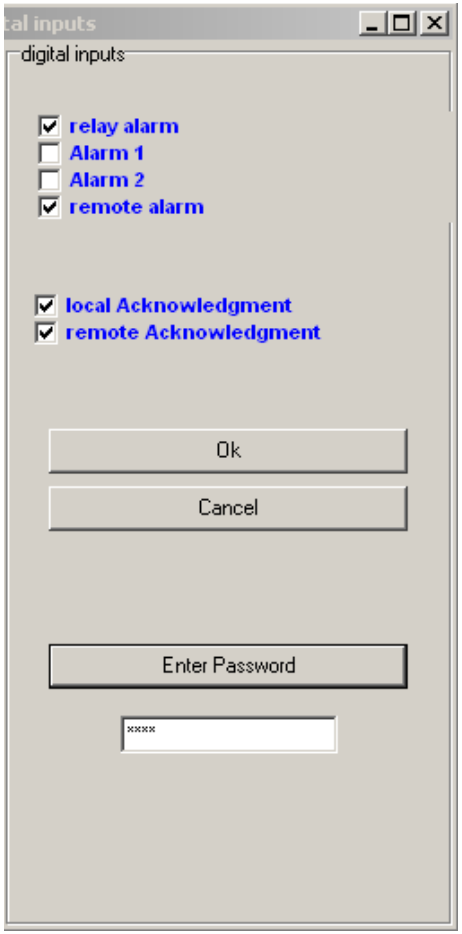
BM25 Alarm Transfer Config



Maintenance – Under this dropdown, the user will have access to the maintenance portion of the BM25.

Configuration of Digital Input – Through this screen the user can set the Logic Input.

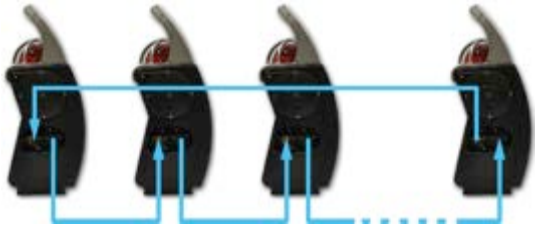
BM25 Alarm Transfer Config



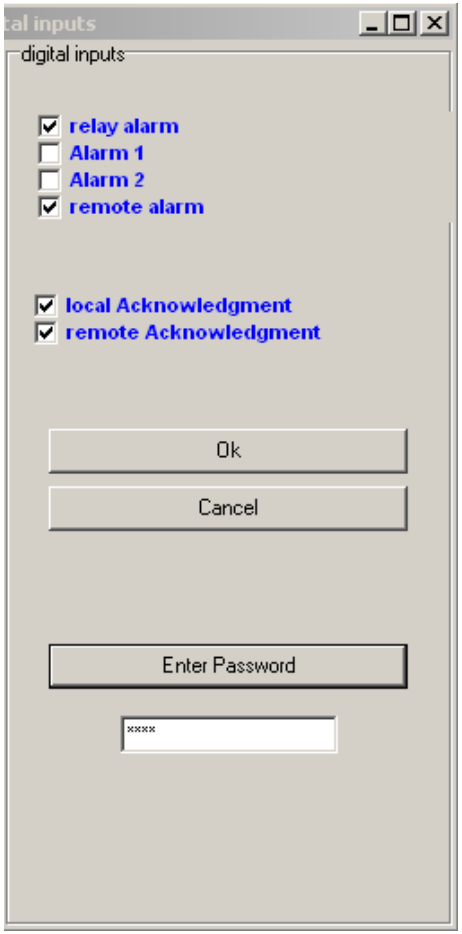
Configuration of Digital Input – Through this screen the user can set the Logic Input.

Upon checking the relay alarm box, the BM25 will actuate its alarm relay output when its logic input is activated.

This provides ability for manual activation of the unit's alarm or for the transfer of an alarm condition to other BM25s that are connected.



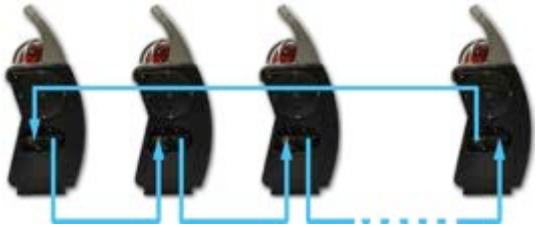
BM25 Alarm Transfer Config



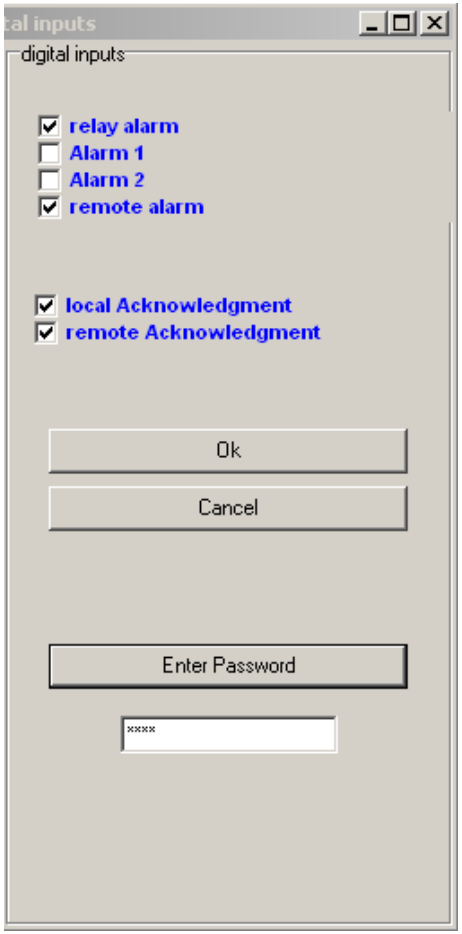
Configuration of Digital Input – Through this screen the user can set the Logic Input.

Upon checking the relay alarm box, the BM25 will actuate its alarm relay output when its logic input is activated.

This provides ability for manual activation of the unit's alarm or for the transfer of an alarm condition to other BM25s that are connected.



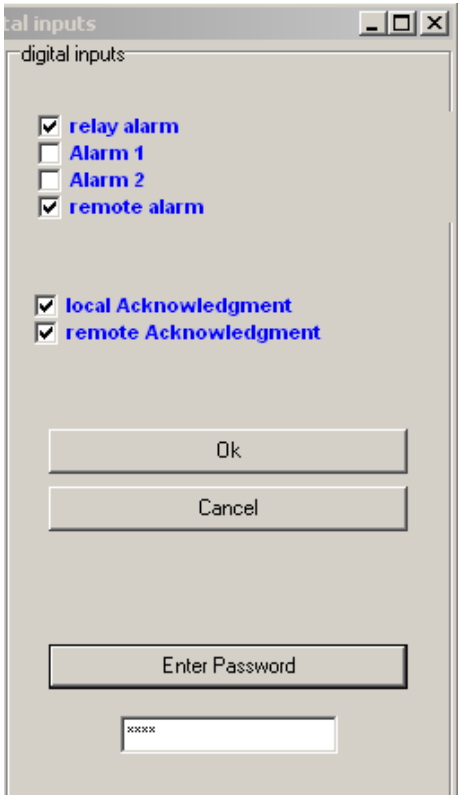
BM25 Alarm Transfer Config



Upon checking the relay alarm box, the BM25 will actuate its alarm relay output when its logic input is activated.

By selecting Alarm 1 or Alarm 2, the BM25 will turn into Alarm 1 or Alarm 2 condition when the logic input is activated.

BM25 Alarm Transfer Config



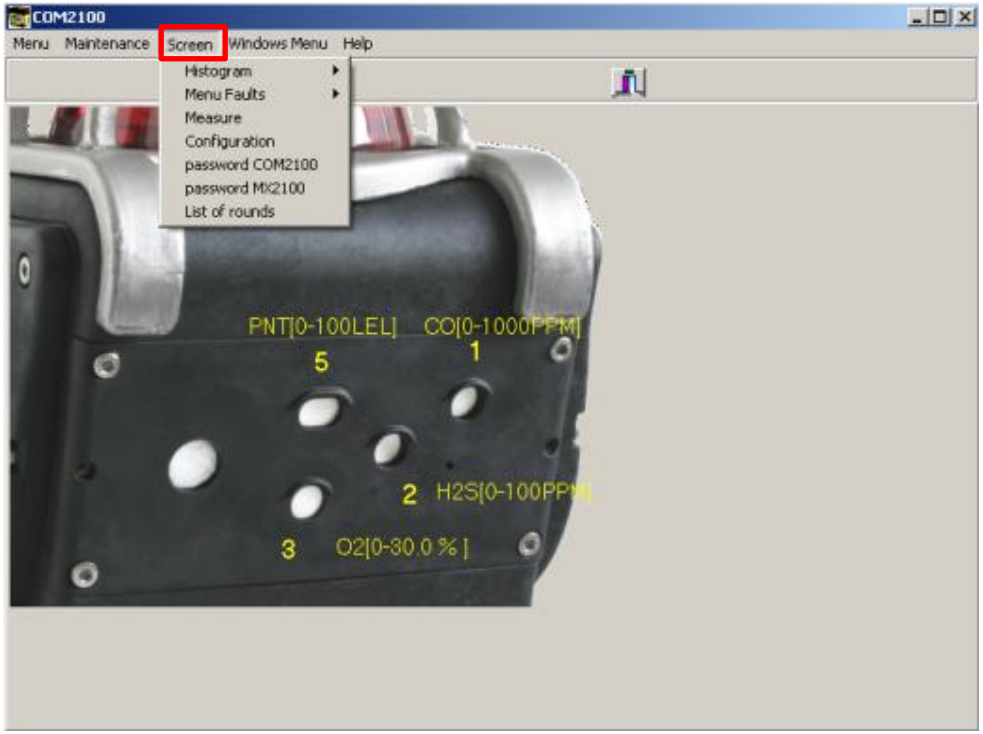
Upon checking the relay alarm box, the BM25 will actuate its alarm relay output when its logic input is activated.

By selecting Remote alarm, the BM25 will produce a very slow two tone sound and the visual alarm strobe will flash once every two seconds.

This allows for quick identification of the BM25 in alarm condition so that the appropriate action can be taken.

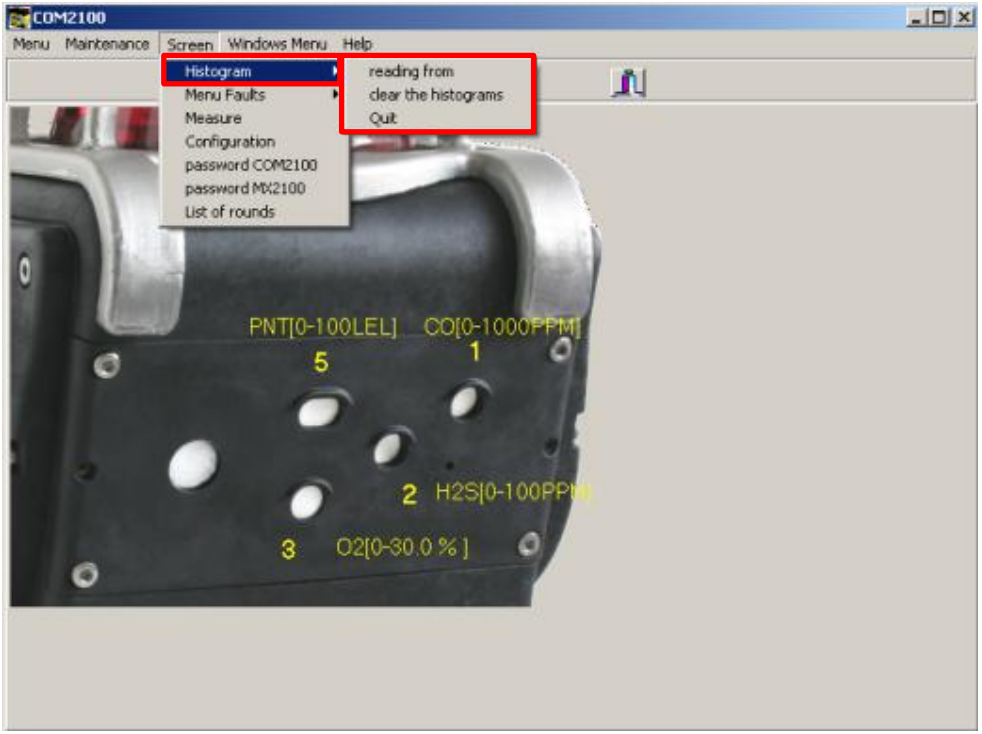
The display will show ‘Alarm Transfer’.

BM25 Screen Tab



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

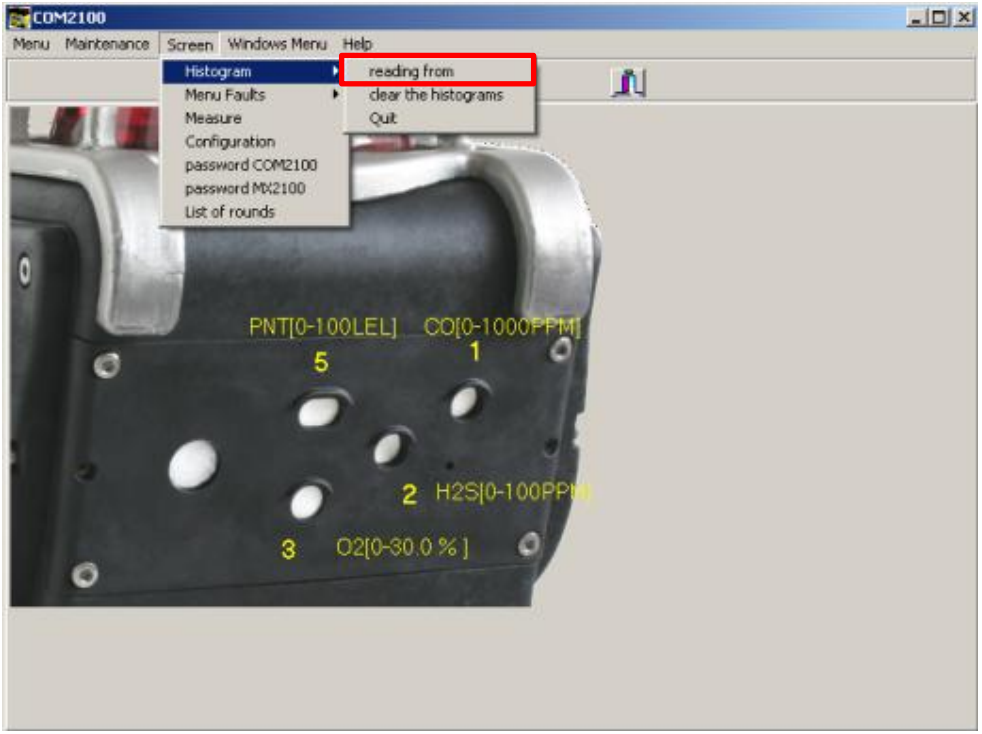
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – Under this option the user can download the datalogger and/or clear out the information logged.

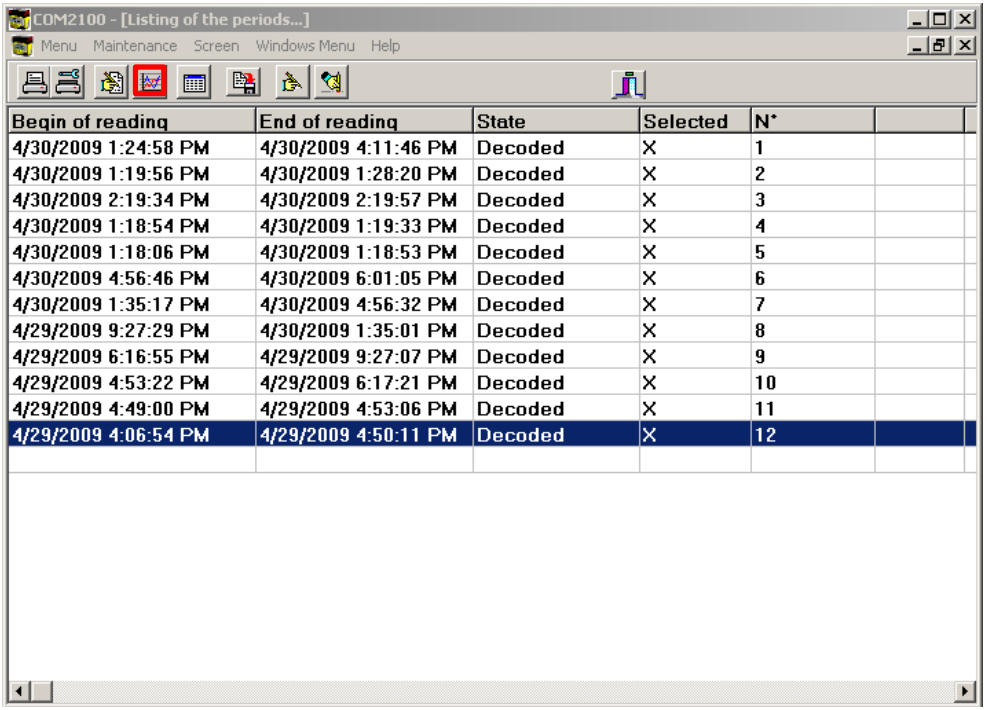
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – Clicking on “reading from” will allow the user to download the datalogger.

BM25 Histogram

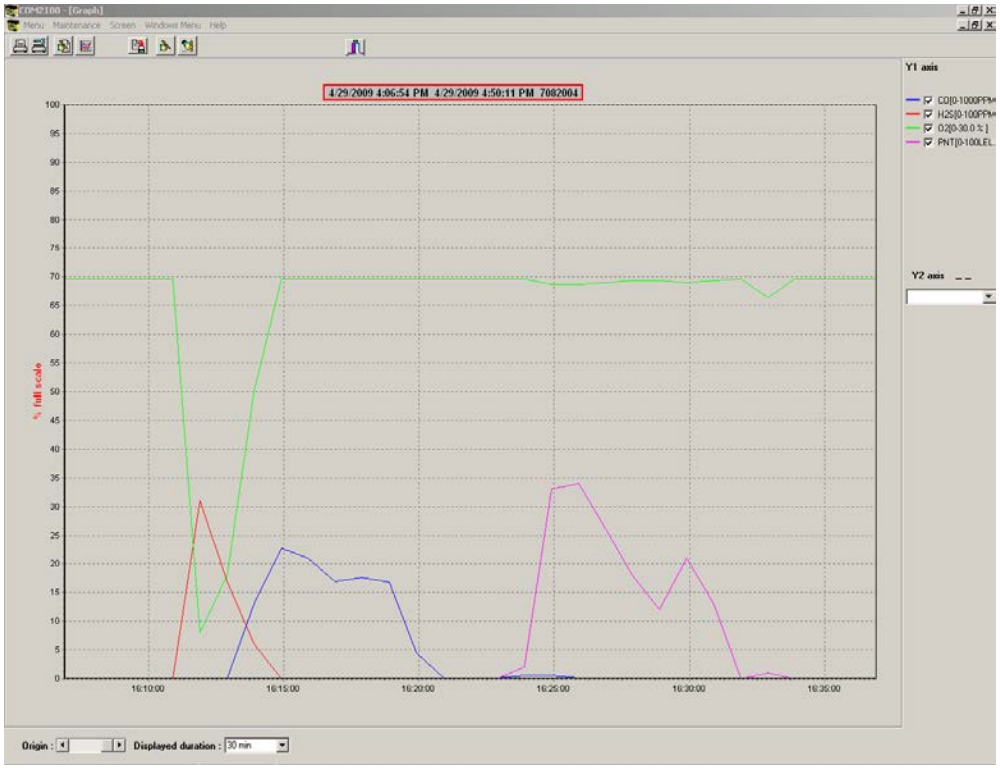


Begin of reading	End of reading	State	Selected	N°
4/30/2009 1:24:58 PM	4/30/2009 4:11:46 PM	Decoded	X	1
4/30/2009 1:19:56 PM	4/30/2009 1:28:20 PM	Decoded	X	2
4/30/2009 2:19:34 PM	4/30/2009 2:19:57 PM	Decoded	X	3
4/30/2009 1:18:54 PM	4/30/2009 1:19:33 PM	Decoded	X	4
4/30/2009 1:18:06 PM	4/30/2009 1:18:53 PM	Decoded	X	5
4/30/2009 4:56:46 PM	4/30/2009 6:01:05 PM	Decoded	X	6
4/30/2009 1:35:17 PM	4/30/2009 4:56:32 PM	Decoded	X	7
4/29/2009 9:27:29 PM	4/30/2009 1:35:01 PM	Decoded	X	8
4/29/2009 6:16:55 PM	4/29/2009 9:27:07 PM	Decoded	X	9
4/29/2009 4:53:22 PM	4/29/2009 6:17:21 PM	Decoded	X	10
4/29/2009 4:49:00 PM	4/29/2009 4:53:06 PM	Decoded	X	11
4/29/2009 4:06:54 PM	4/29/2009 4:50:11 PM	Decoded	X	12

Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – To receive a graphical representation of all the readings recorded, click on the file of interest and the graph icon on the top tool bar.

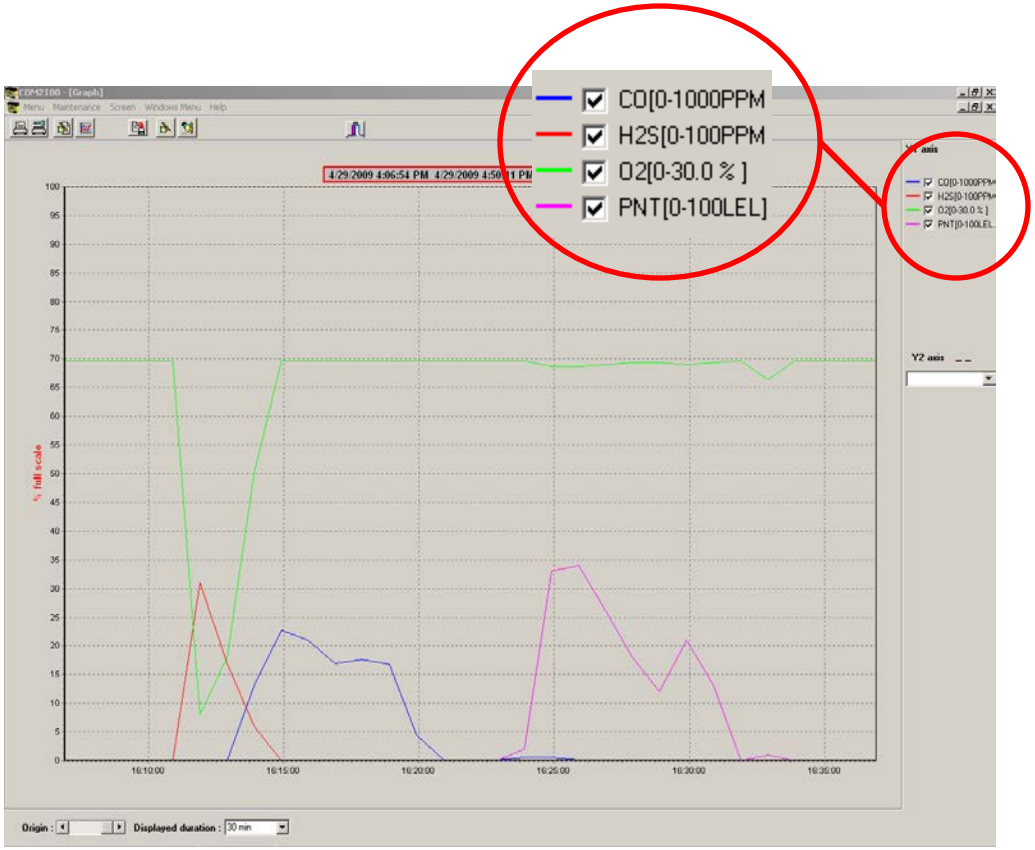
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – From this screen the user can view and print this graph.

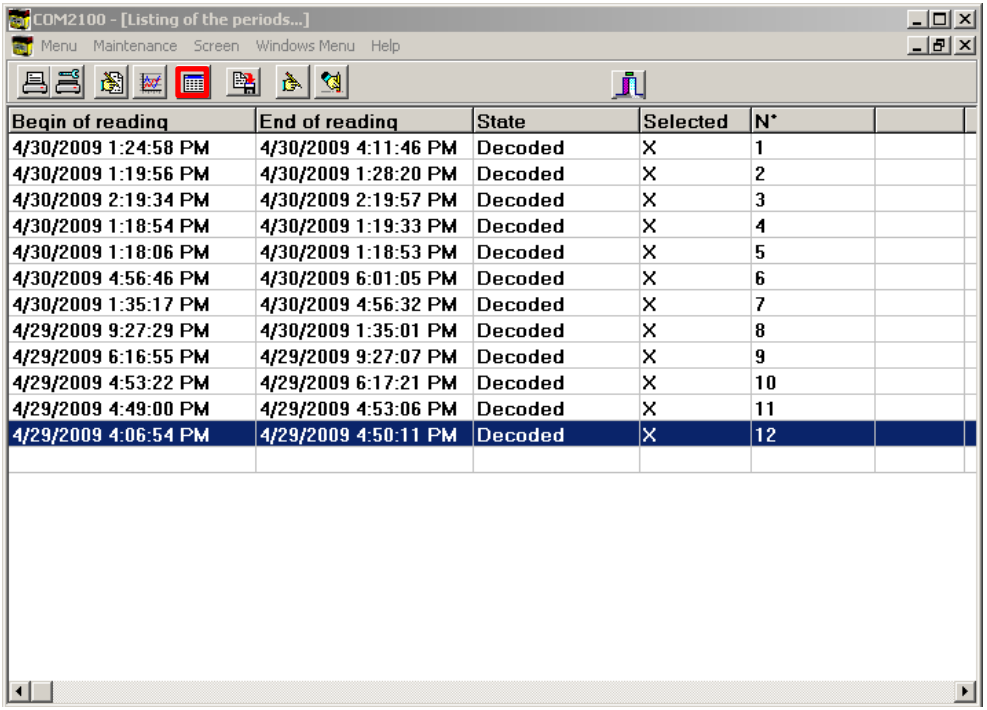
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – Check the box of the sensor type you wish to have displayed graphically.

BM25 Histogram

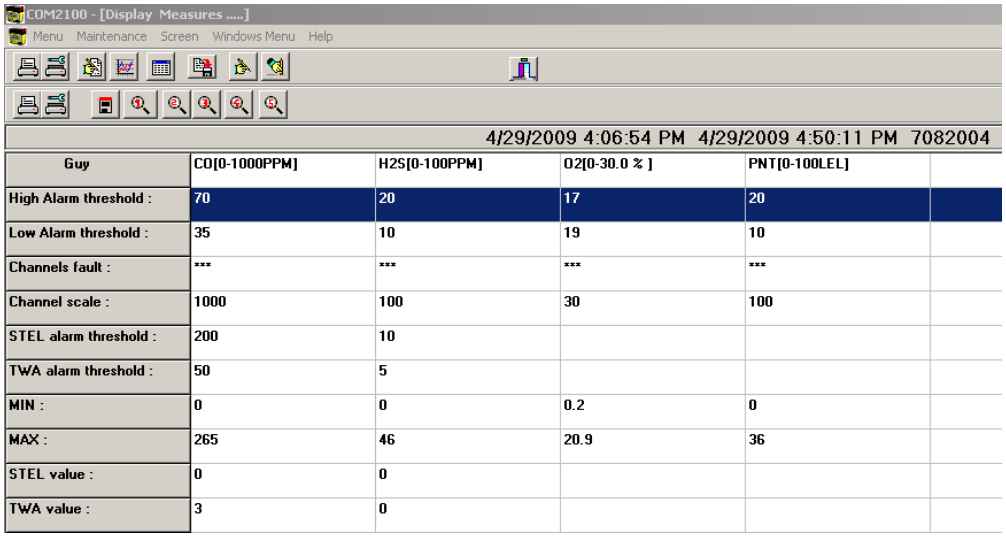


Begin of reading	End of reading	State	Selected	N°
4/30/2009 1:24:58 PM	4/30/2009 4:11:46 PM	Decoded	X	1
4/30/2009 1:19:56 PM	4/30/2009 1:28:20 PM	Decoded	X	2
4/30/2009 2:19:34 PM	4/30/2009 2:19:57 PM	Decoded	X	3
4/30/2009 1:18:54 PM	4/30/2009 1:19:33 PM	Decoded	X	4
4/30/2009 1:18:06 PM	4/30/2009 1:18:53 PM	Decoded	X	5
4/30/2009 4:56:46 PM	4/30/2009 6:01:05 PM	Decoded	X	6
4/30/2009 1:35:17 PM	4/30/2009 4:56:32 PM	Decoded	X	7
4/29/2009 9:27:29 PM	4/30/2009 1:35:01 PM	Decoded	X	8
4/29/2009 6:16:55 PM	4/29/2009 9:27:07 PM	Decoded	X	9
4/29/2009 4:53:22 PM	4/29/2009 6:17:21 PM	Decoded	X	10
4/29/2009 4:49:00 PM	4/29/2009 4:53:06 PM	Decoded	X	11
4/29/2009 4:06:54 PM	4/29/2009 4:50:11 PM	Decoded	X	12

Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – To receive details about the period selected, click on the icon to the right of graph.

BM25 Histogram

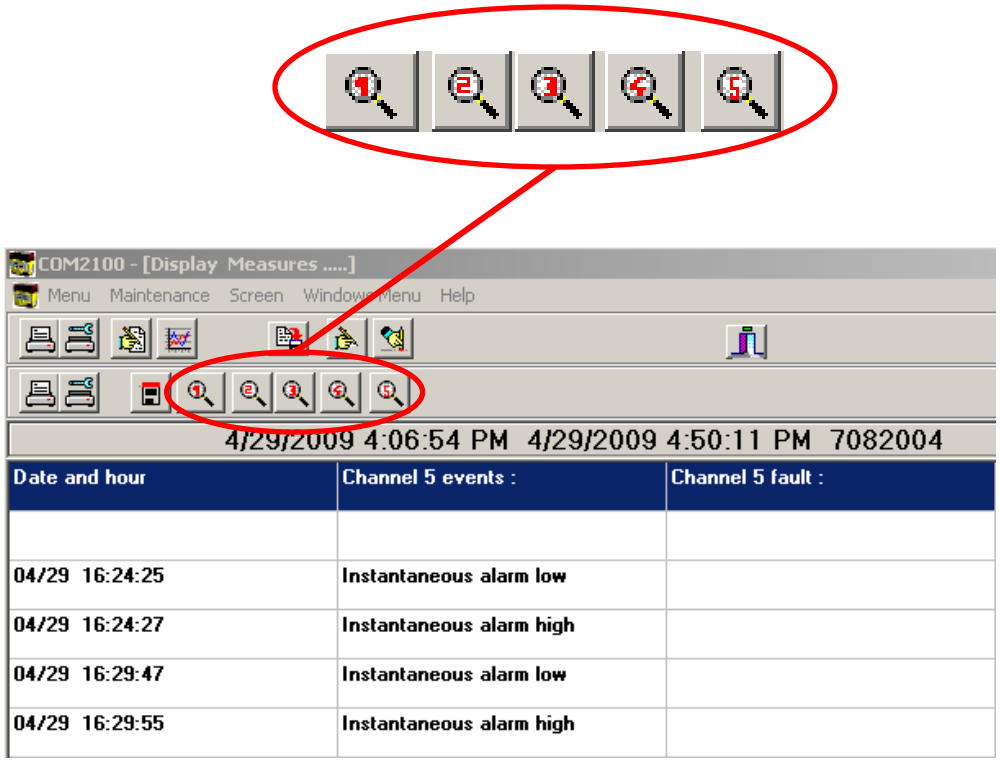


Guy	CO[0-1000PPM]	H2S[0-100PPM]	O2[0-30.0 %]	PNT[0-100LEL]	
High Alarm threshold :	70	20	17	20	
Low Alarm threshold :	35	10	19	10	
Channels fault :	***	***	***	***	
Channel scale :	1000	100	30	100	
STEL alarm threshold :	200	10			
TWA alarm threshold :	50	5			
MIN :	0	0	0.2	0	
MAX :	265	46	20.9	36	
STEL value :	0	0			
TWA value :	3	0			

Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – This screen will display to the user numerically the Minimum, Maximum, STEL and TWA values.

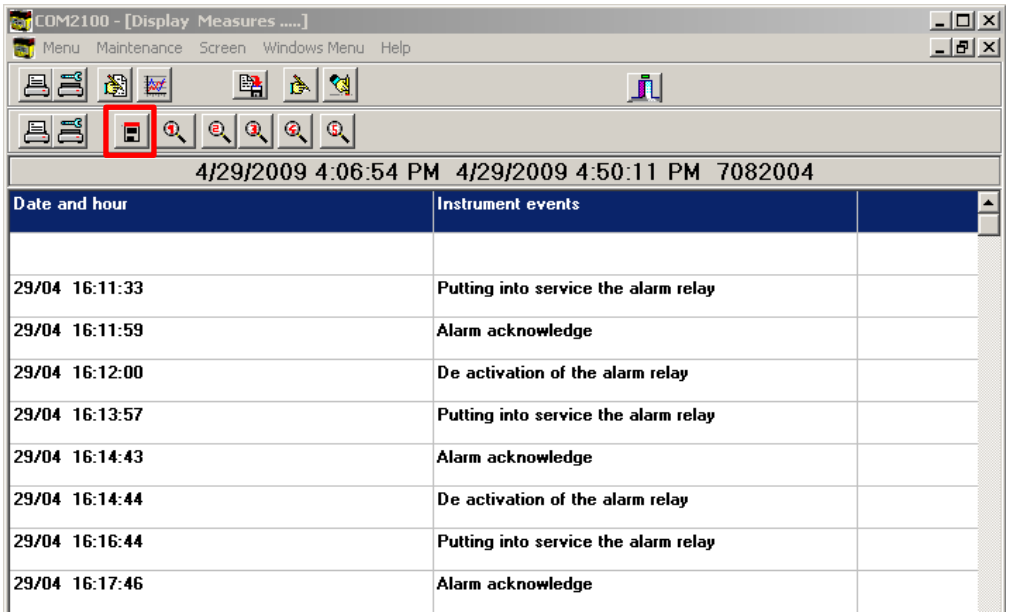
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – The datalogged information for an individual sensor can be viewed by clicking on the corresponding channel number.

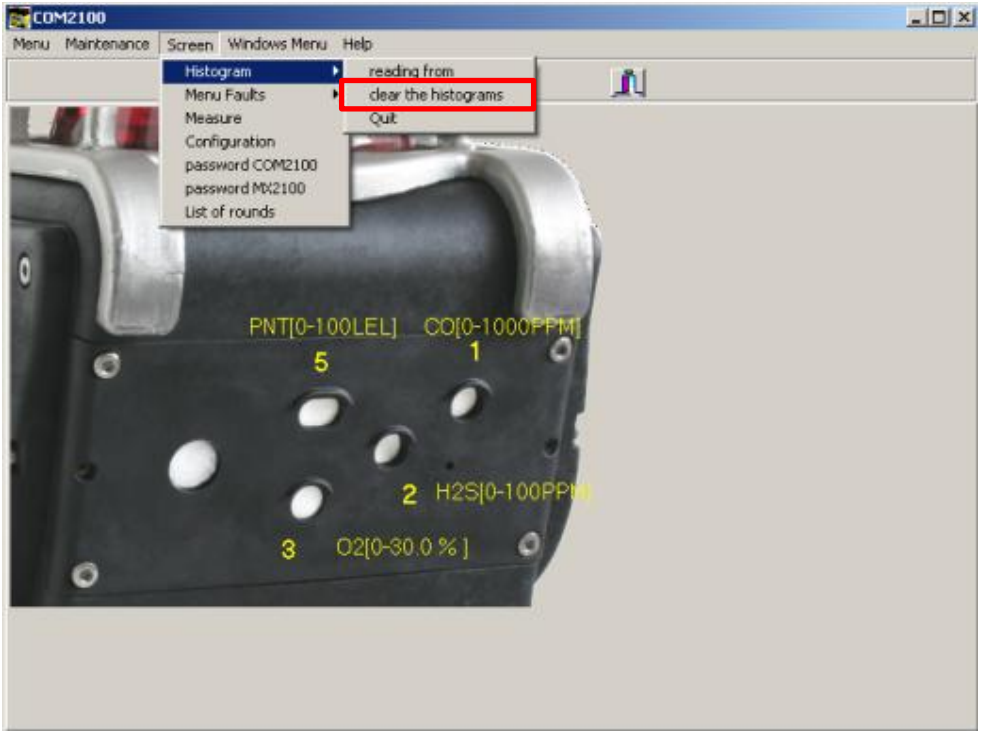
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – Clicking on the instrument icon will display the date and time for all BM25 events.

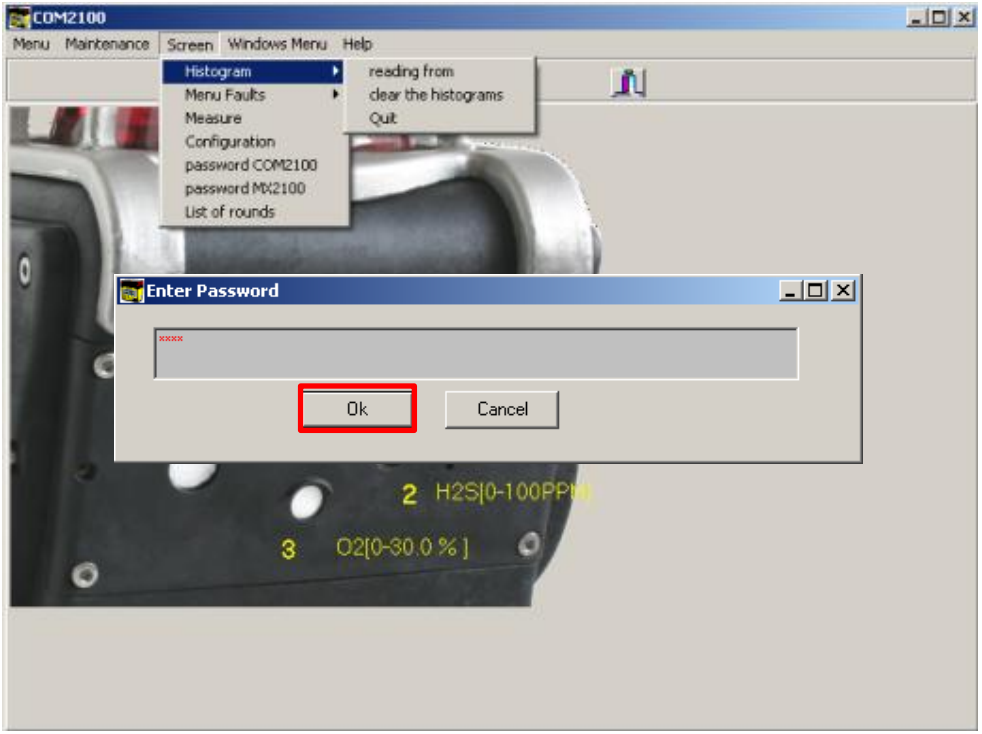
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – The datalogger can be cleared by clicking on “clear the histograms”.

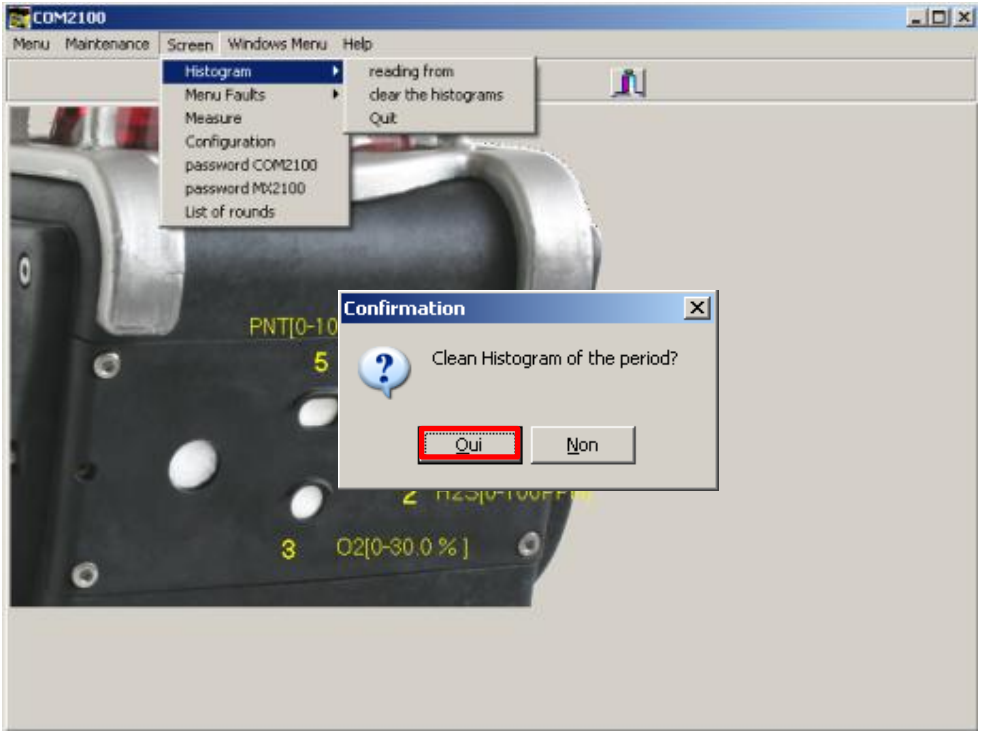
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – At this screen the user must type in the password of “1000” and click the OK button.

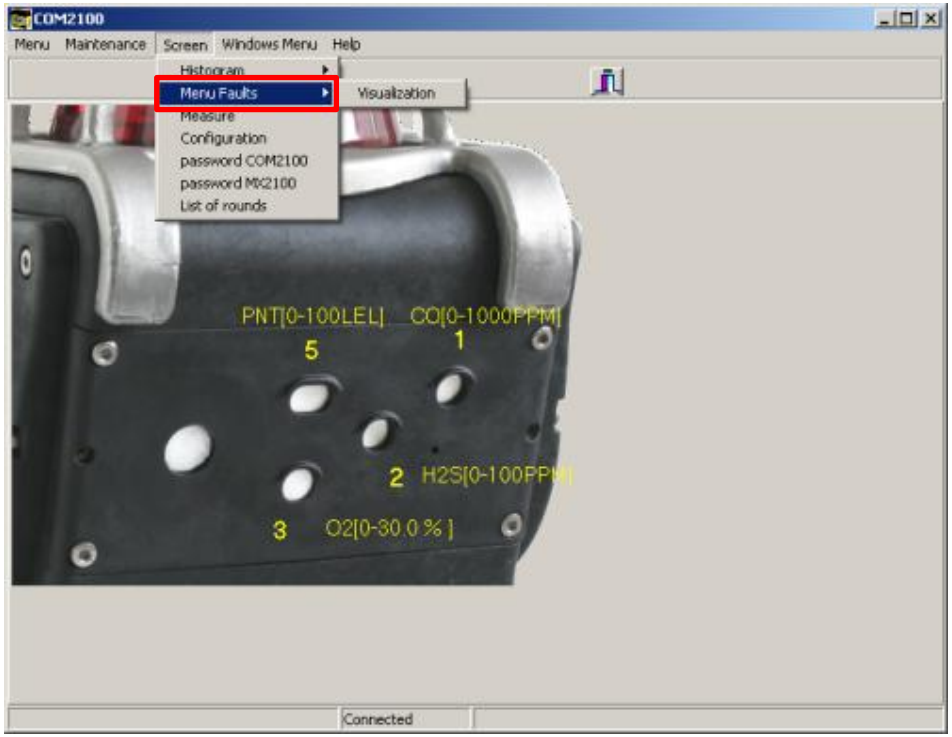
BM25 Histogram



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram – Click Oui (Yes) to confirm the clearing the BM25 datalogger.

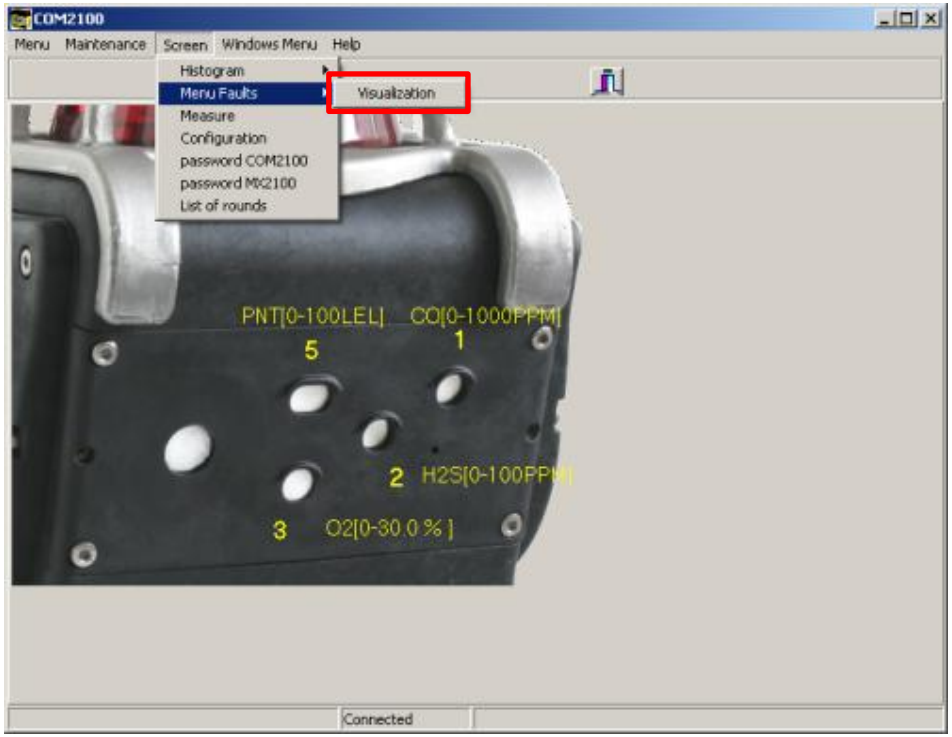
BM25 Menu Faults



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Menu Faults – This option allows the user to view any sensor faults that may be present.

BM25 Menu Faults

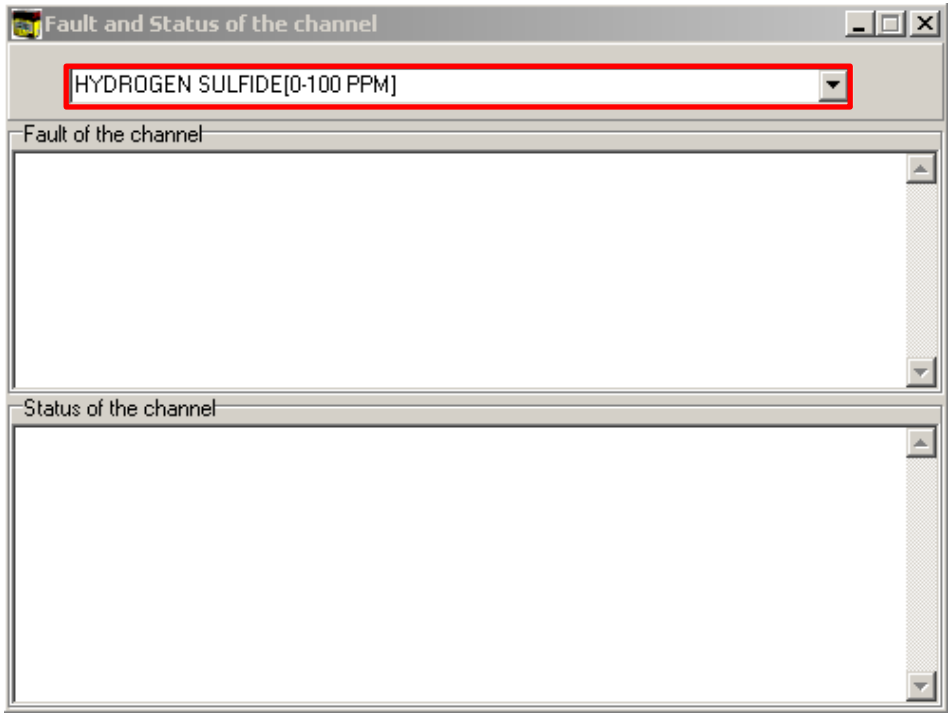


Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Menu Faults – This option allows the user to view any sensor faults that may be present.

Click Visualization to view.

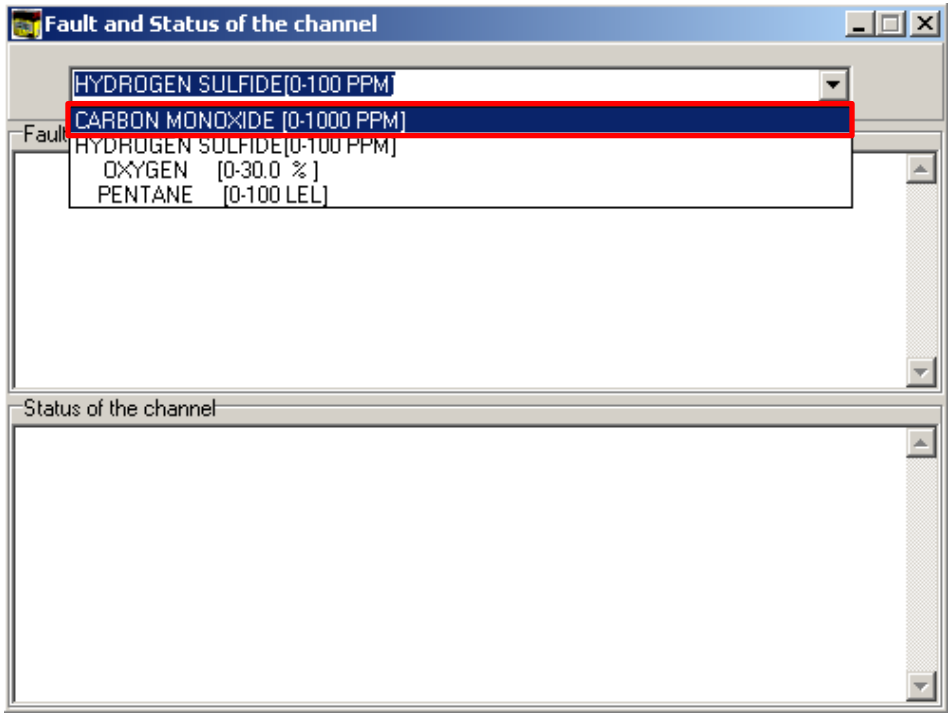
BM25 Menu Faults



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Visualization – From this screen first select the sensor type you wish to view by clicking on the drop down box.

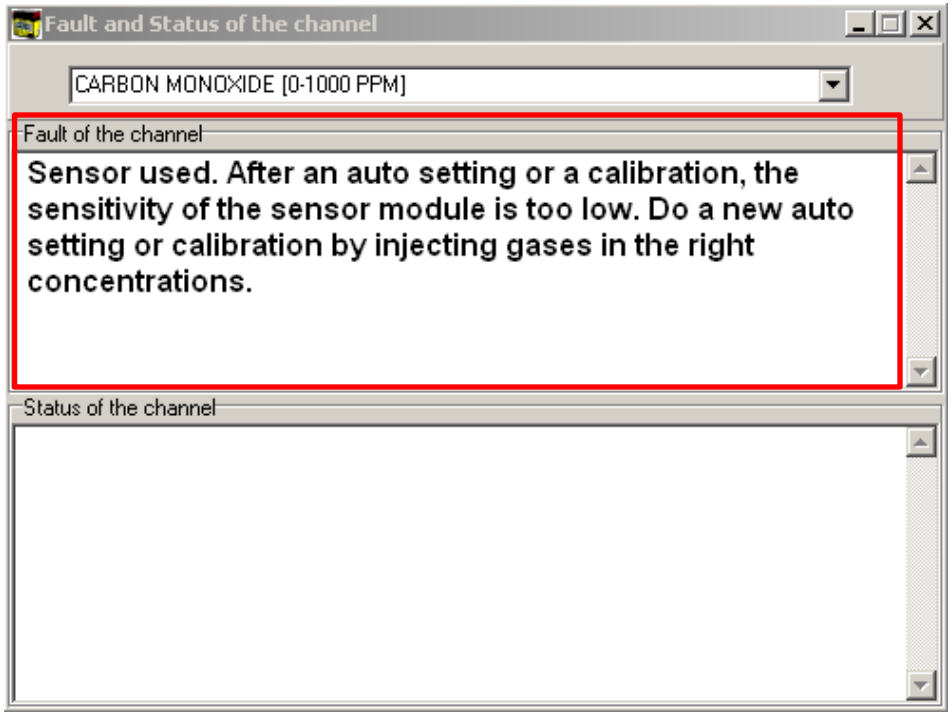
BM25 Menu Faults



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Visualization – Now click on the sensor of interest.

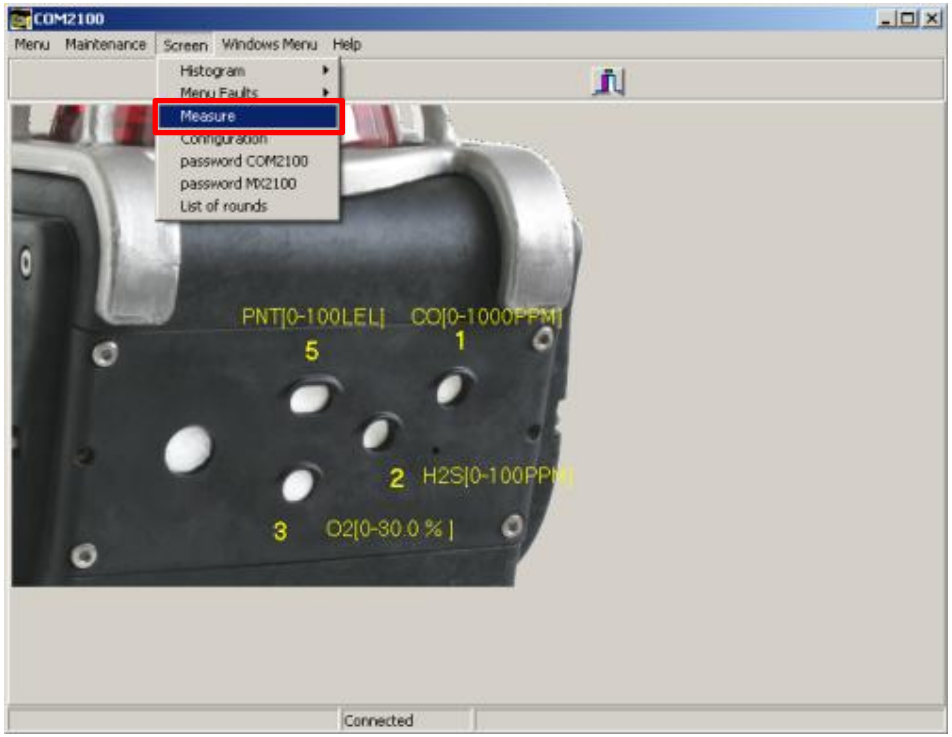
BM25 Menu Faults



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Visualization – If the selected sensor has a fault condition, a message will appear to indicate the fault and possible correction.

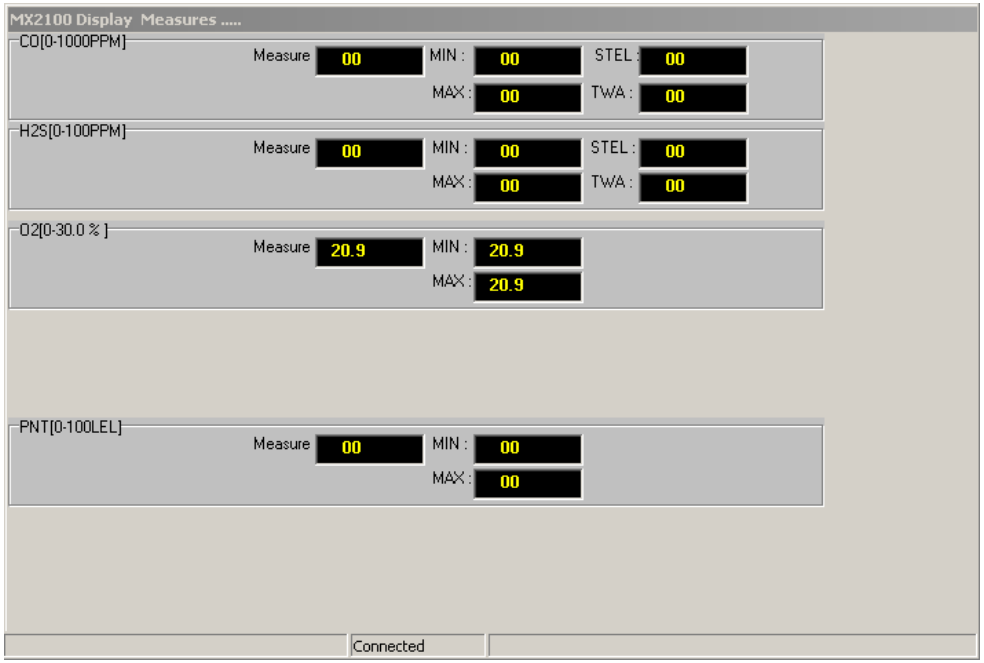
BM25 Measure



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Measure – If selected the user will be able to view all readings through the PC software.

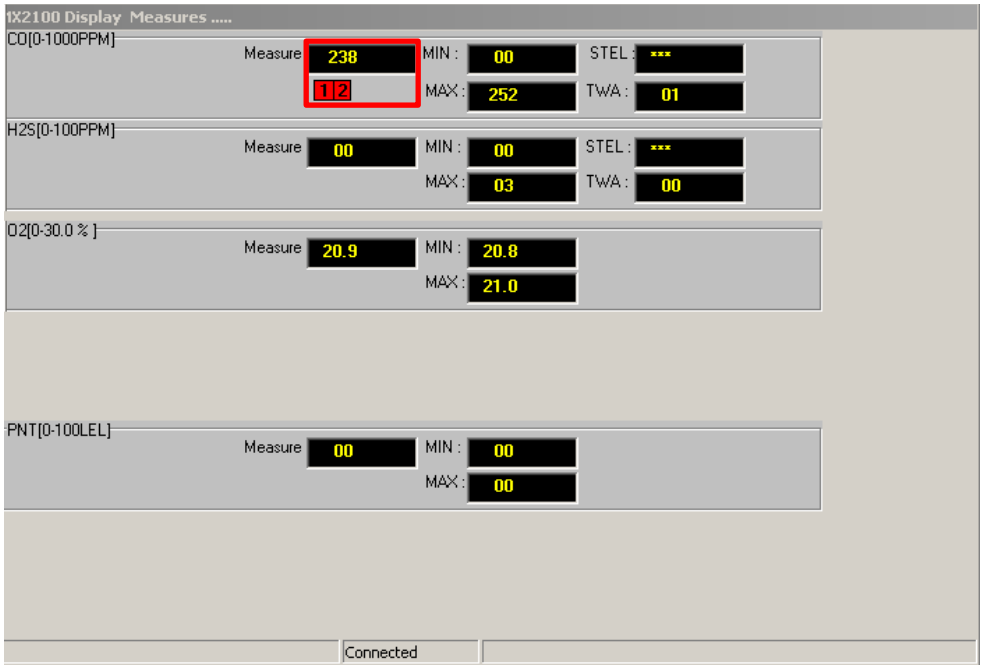
BM25 Measure



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Measure – All readings displayed will be in real time including minimum, maximum, STEL and TWA readings.

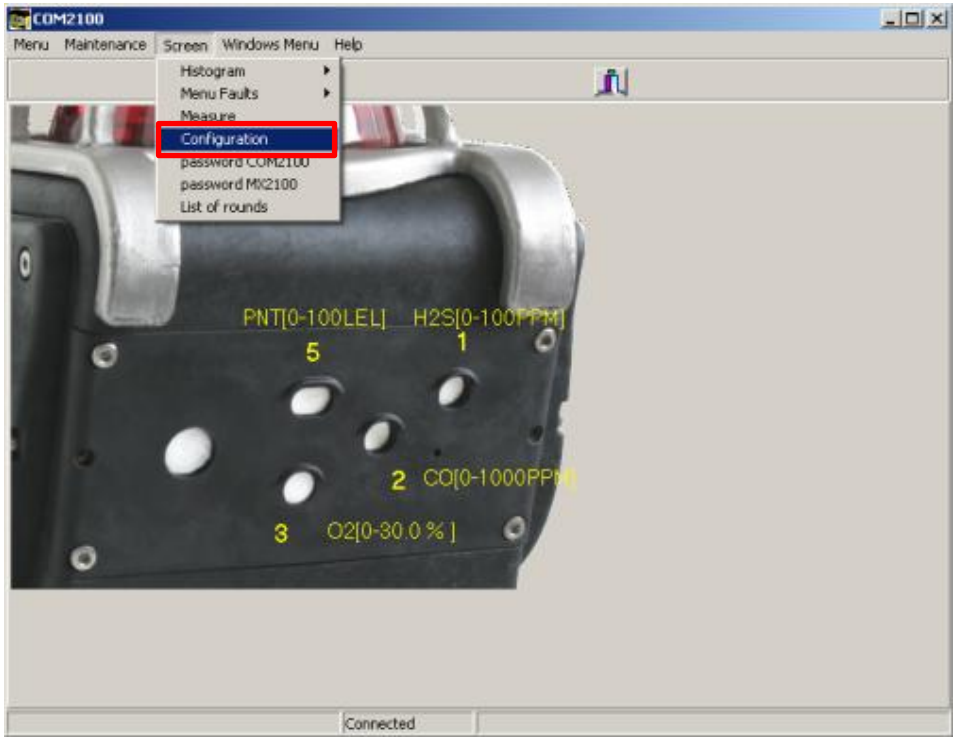
BM25 Measure



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Measure – An alarm indicator will appear next to the sensor that is in alarm.

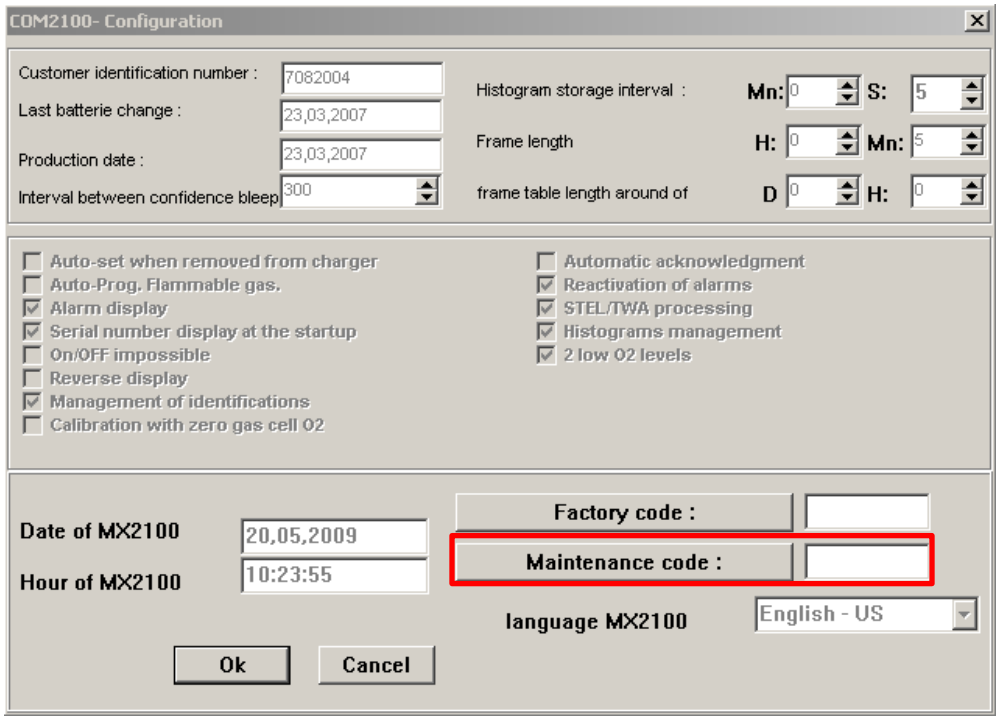
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – This option allows the user to view and change some of the basic operations of the BM25.

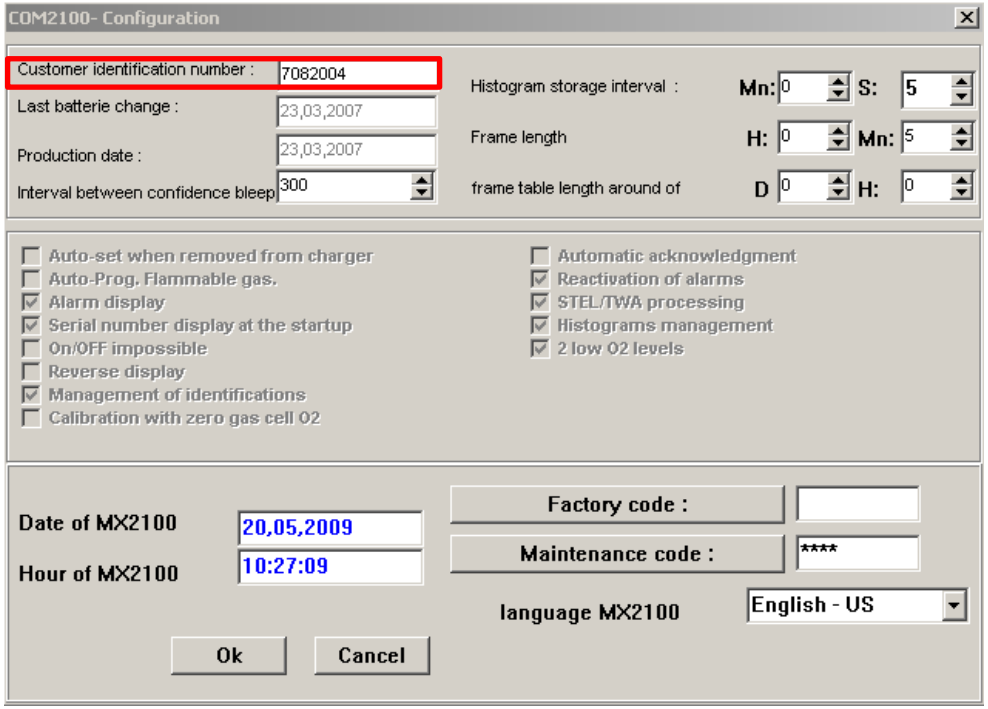
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – To make changes to the configuration, the user must first type in “1000” in the Maintenance code box then press enter.

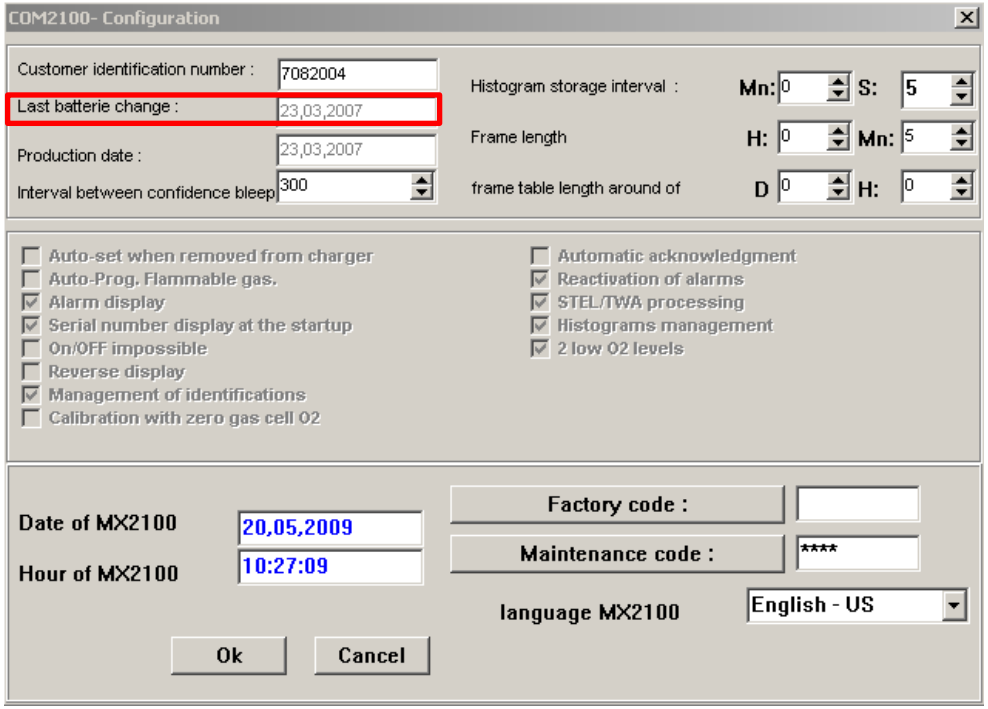
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – Upper left of the screen will show the “Customer identification number” which is the BM25’s serial number.

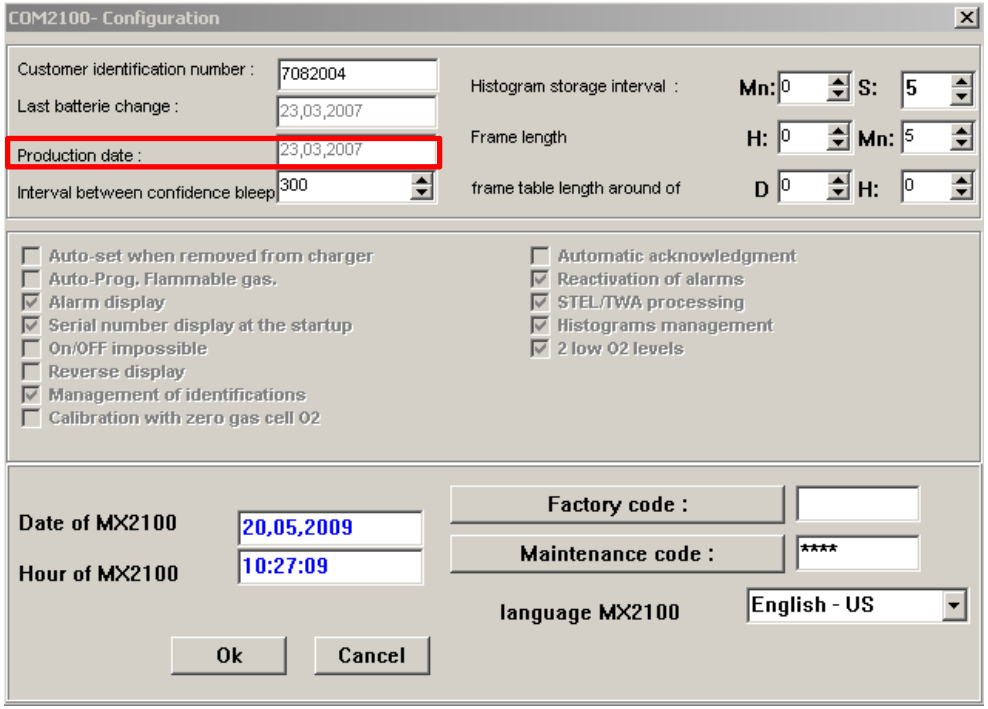
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – Under that the date that the batteries were last changed.

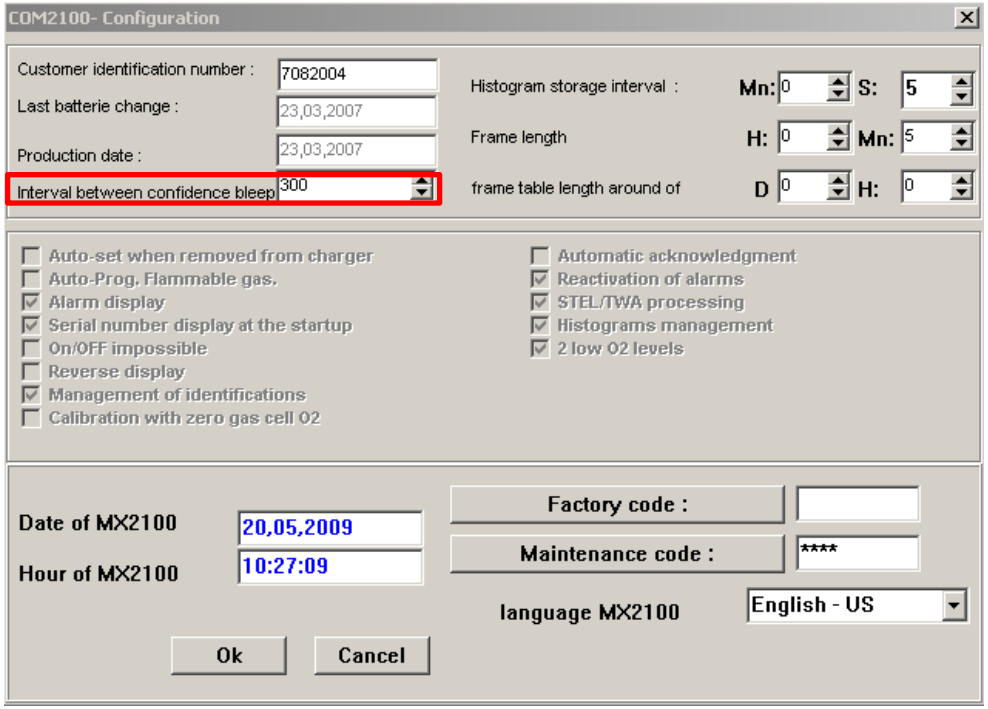
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – The date of production (date code).

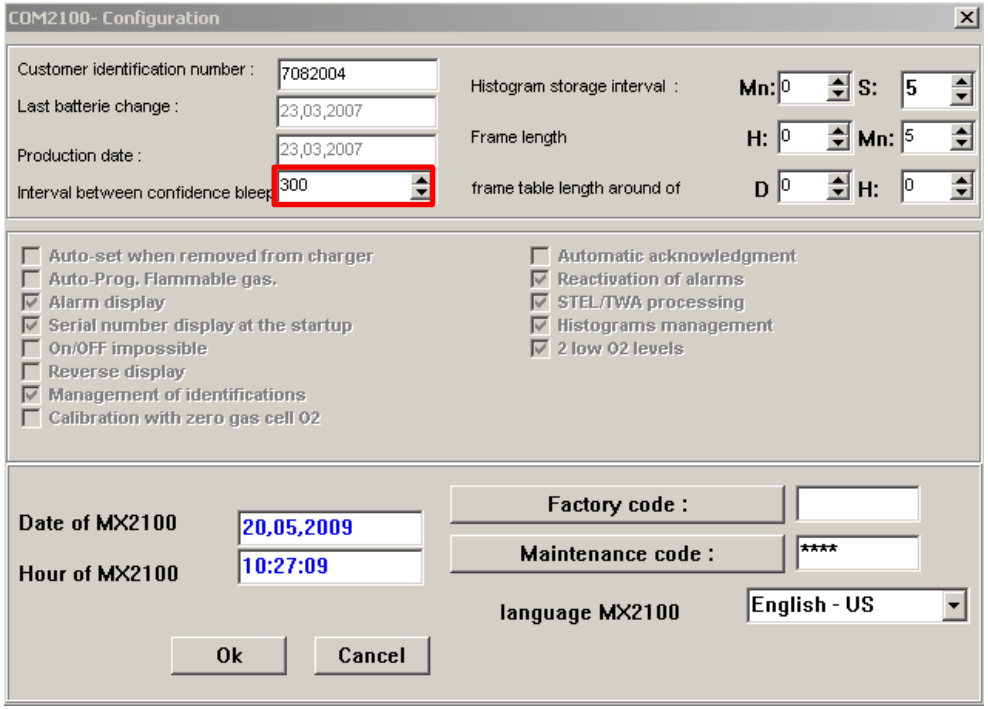
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – Current settings for the confidence flash interval.

BM25 Configuration

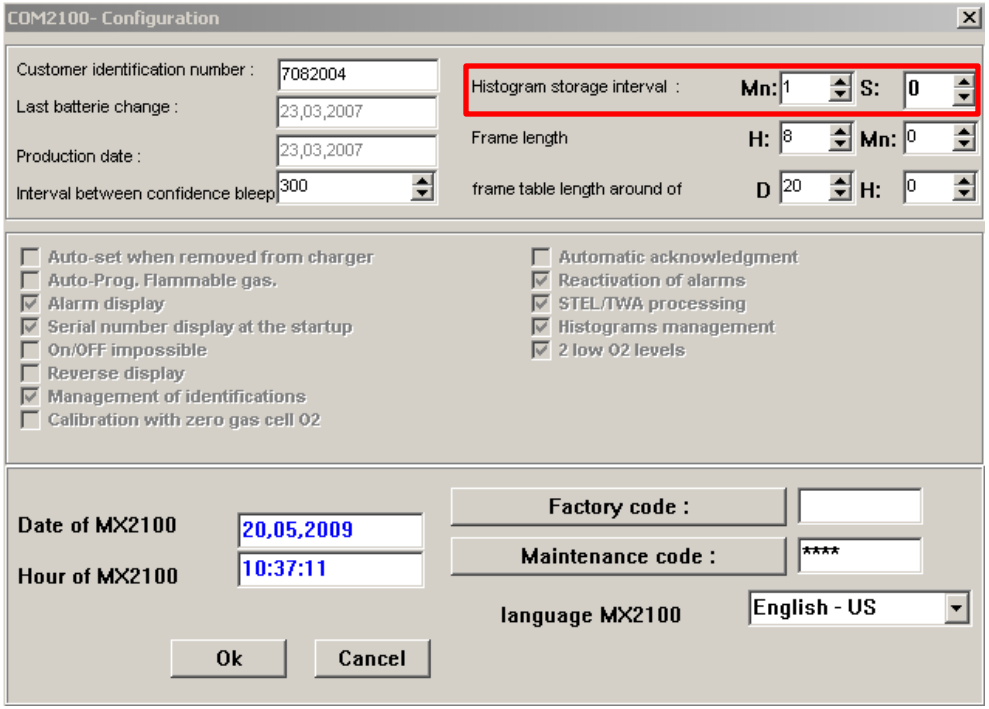


Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Configuration – Current settings for the confidence flash interval.

To change the interval, click the up or down arrow.

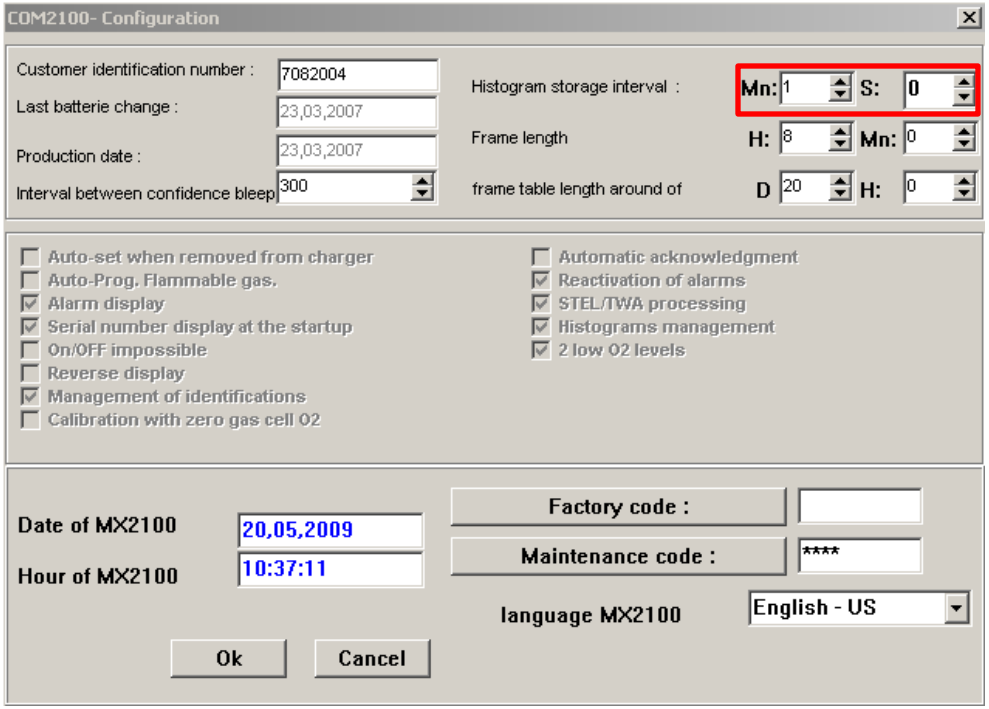
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram Storage Interval – This will display the interval that information is entered into the datalogger of the BM25.

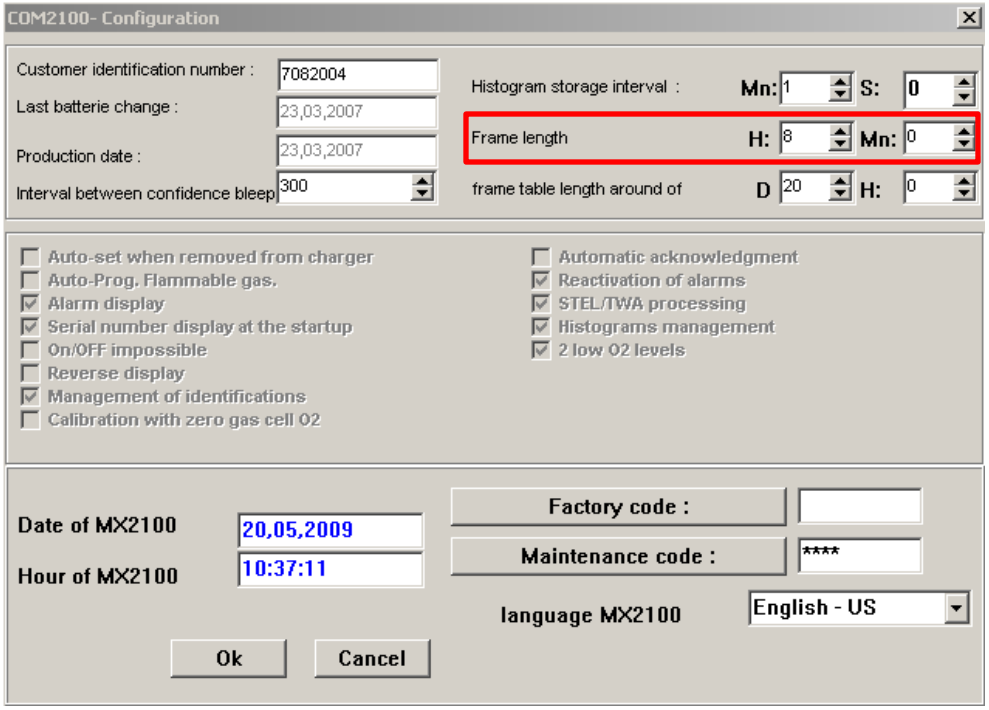
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Histogram Storage Interval – The user can adjust the minute and/or seconds to the desired interval by clicking on the up and down arrows.

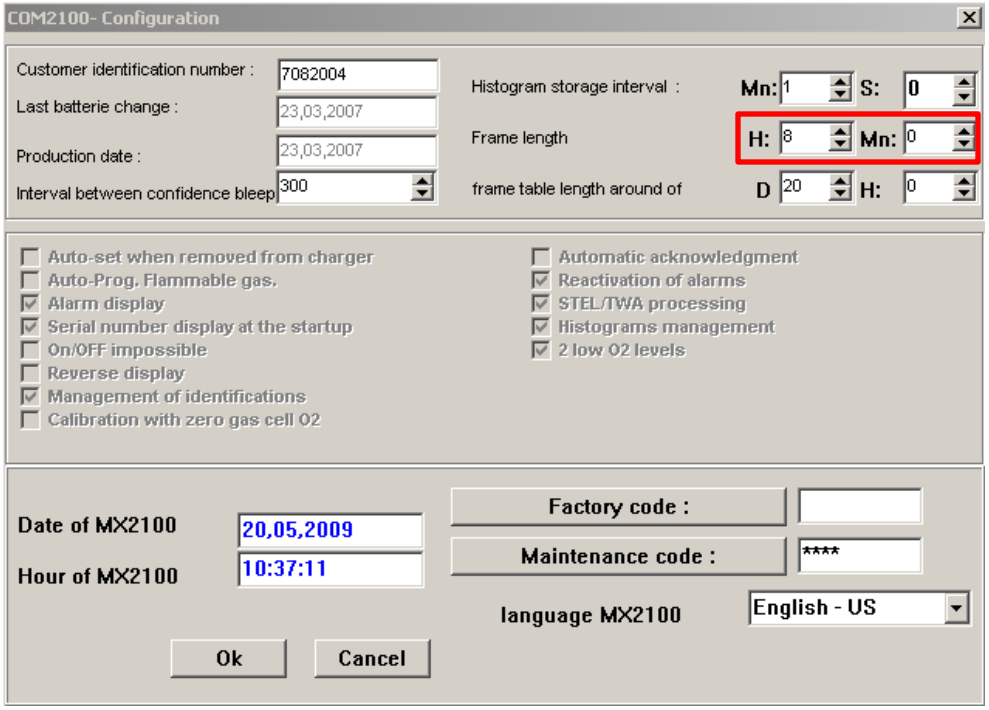
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Frame Length – This will display the length of a frame which will automatically start upon turning on the BM25. This is defaulted to 8 hours.

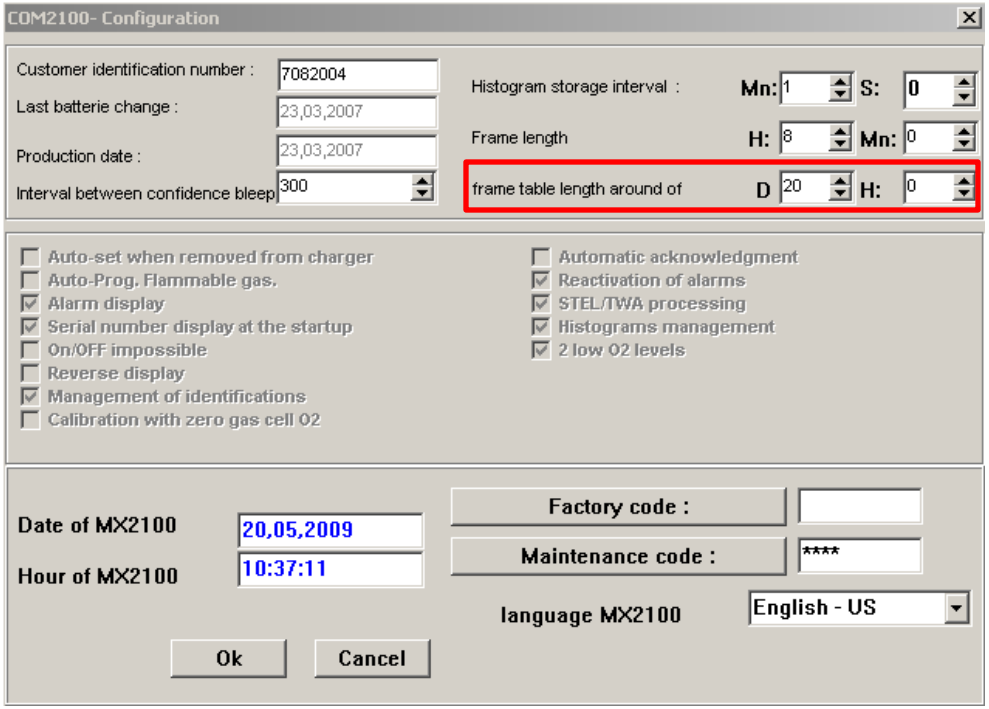
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Frame Length – To change the length, the user can adjust by clicking the up or down arrow to set the hour and/or minutes of the frame.

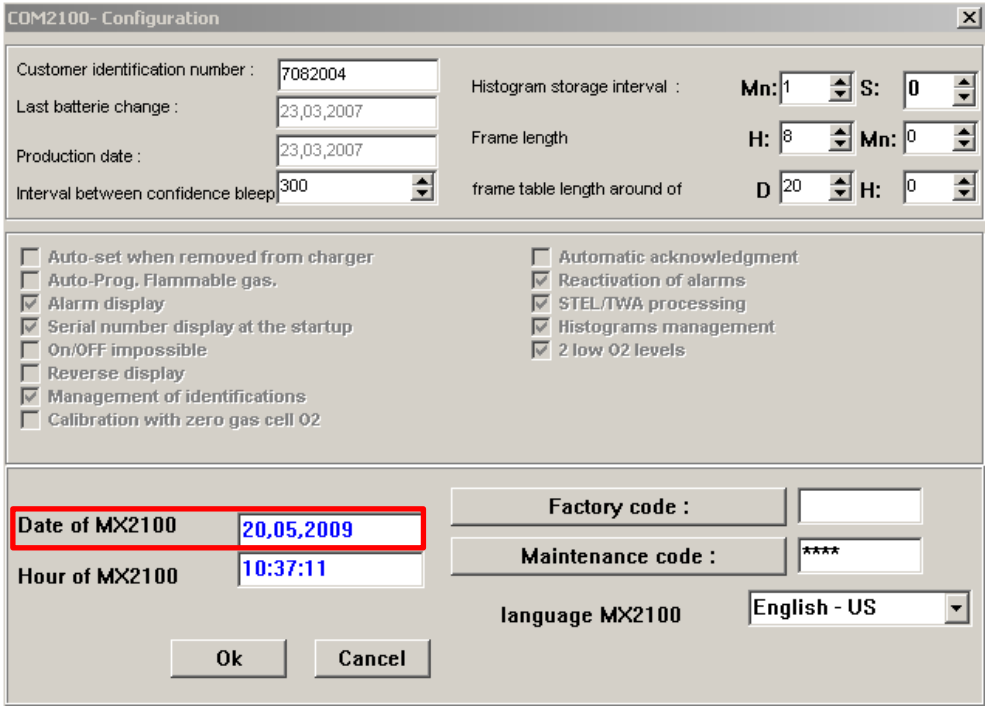
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Frame table length around of – This will give the amount of estimated memory capacity in days and hours based on the above settings.

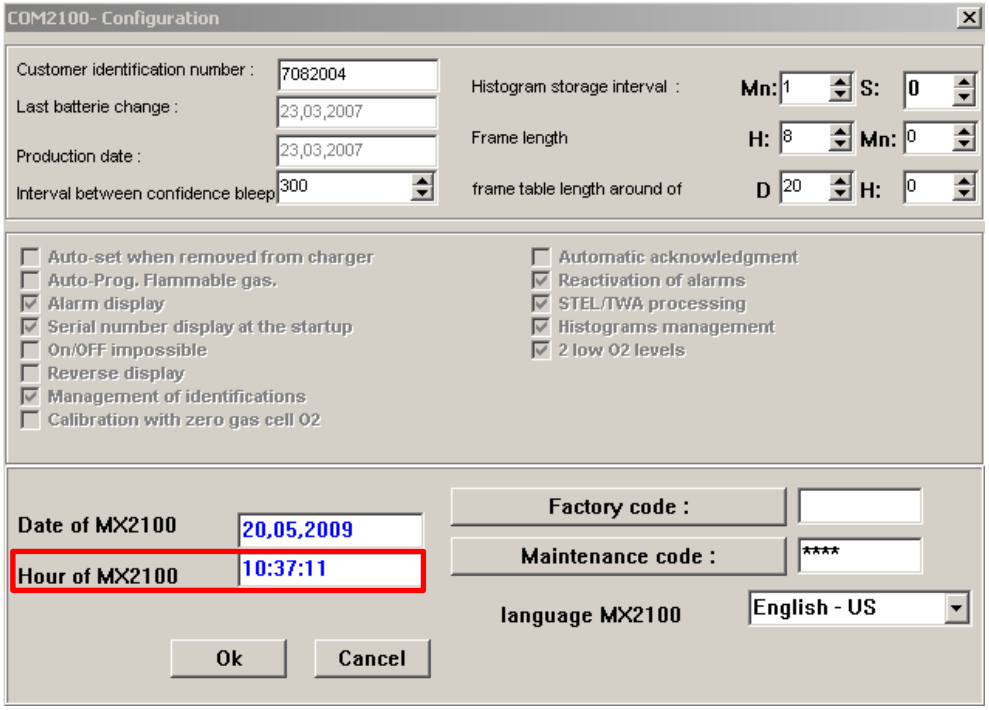
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Date of MX2100 – This will show the current BM25 date and can be changed by typing in the correct date.

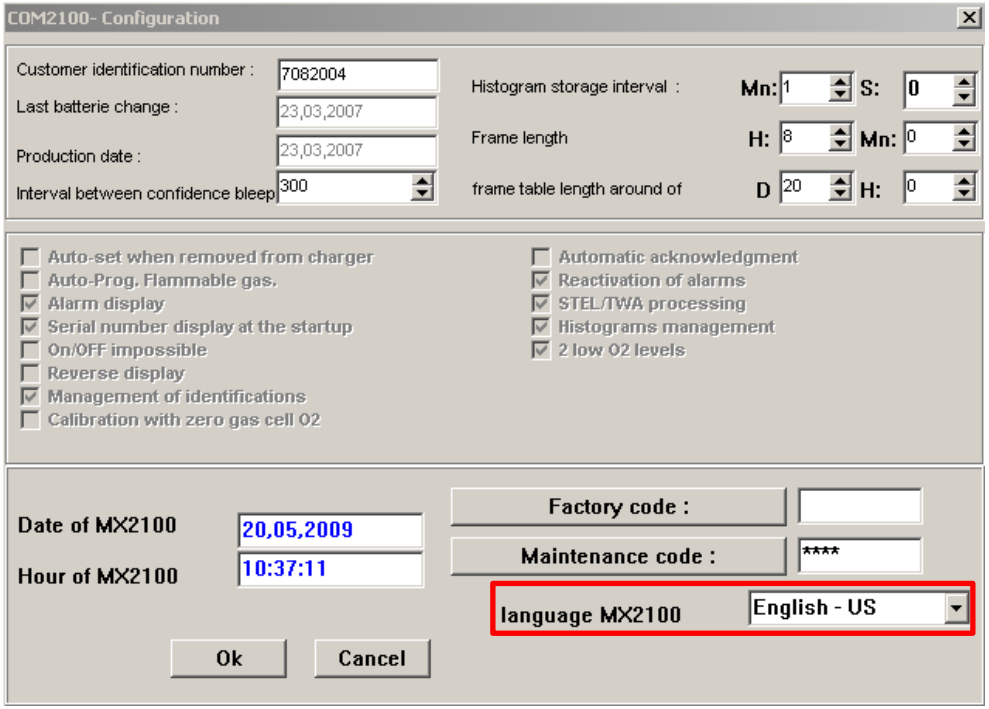
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Hour of MX2100 – This will show the current BM25 time and can be changed by typing in the correct time.

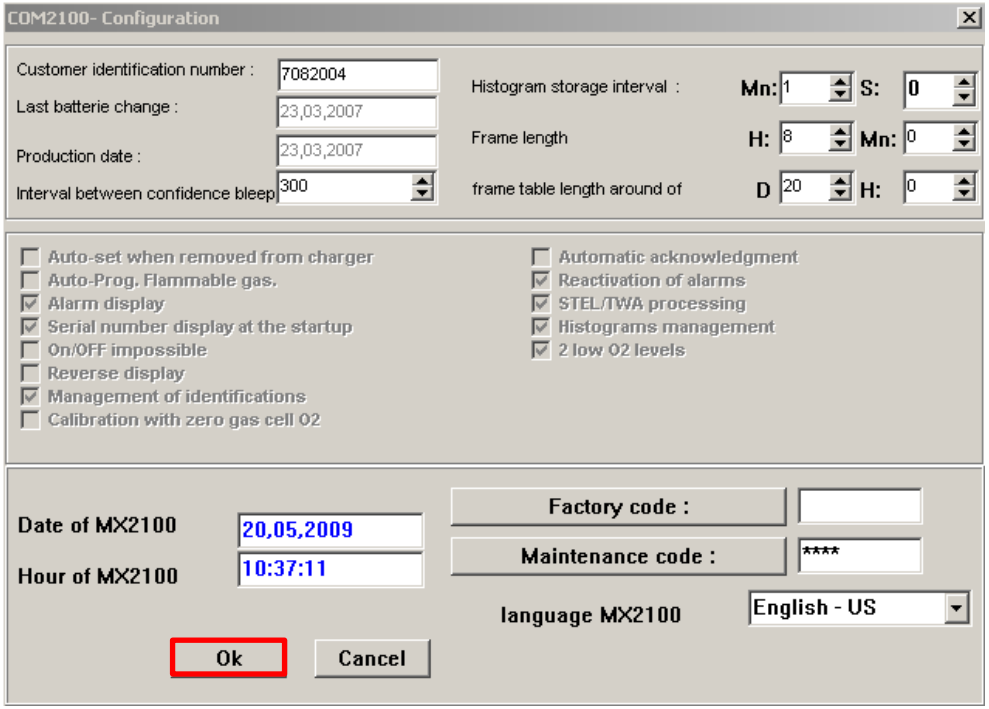
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

language MX2100 – Through this option the user can select one of 12 different languages for the BM25.

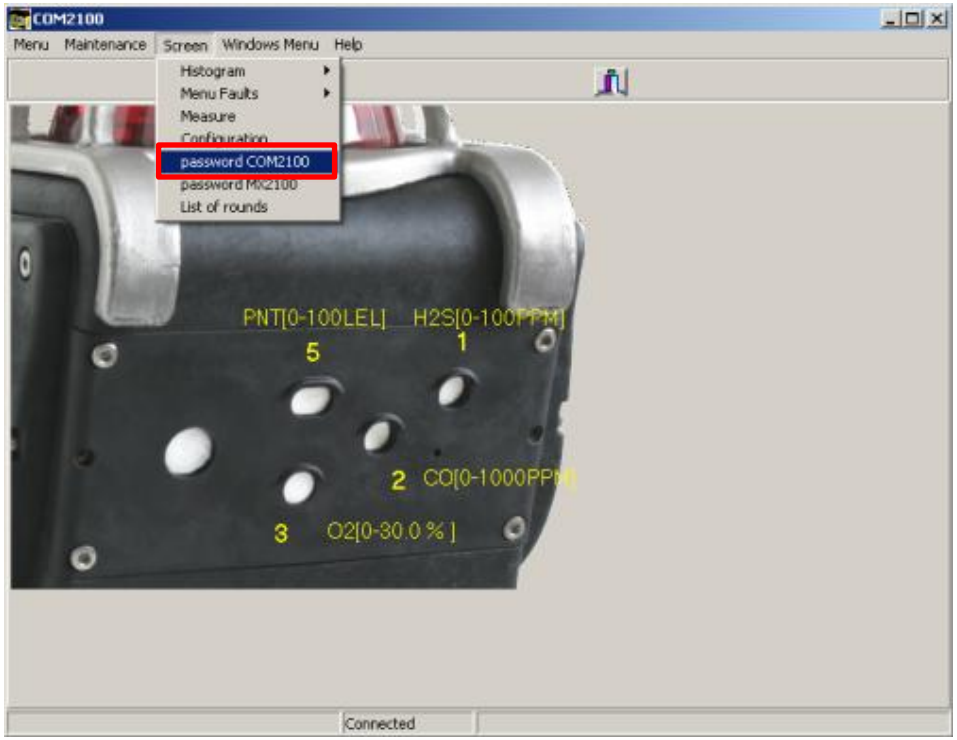
BM25 Configuration



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

To ensure that the changes take effect, click the Ok button before closing.

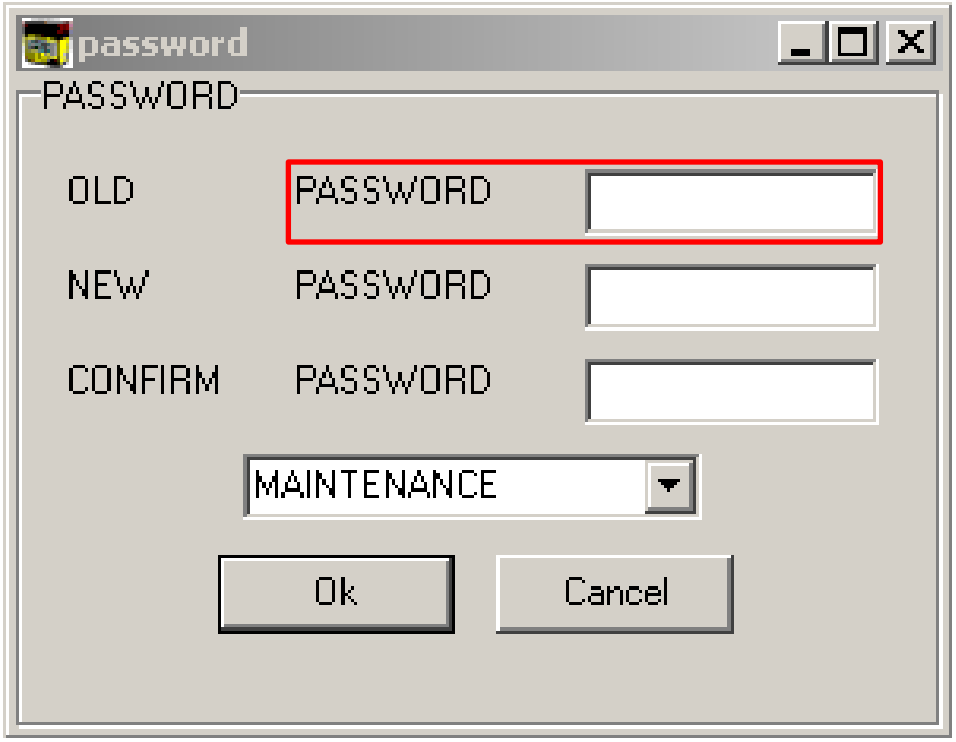
BM25 Password CM2100



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password COM2100 – Through this option the user can change the default password of the software.

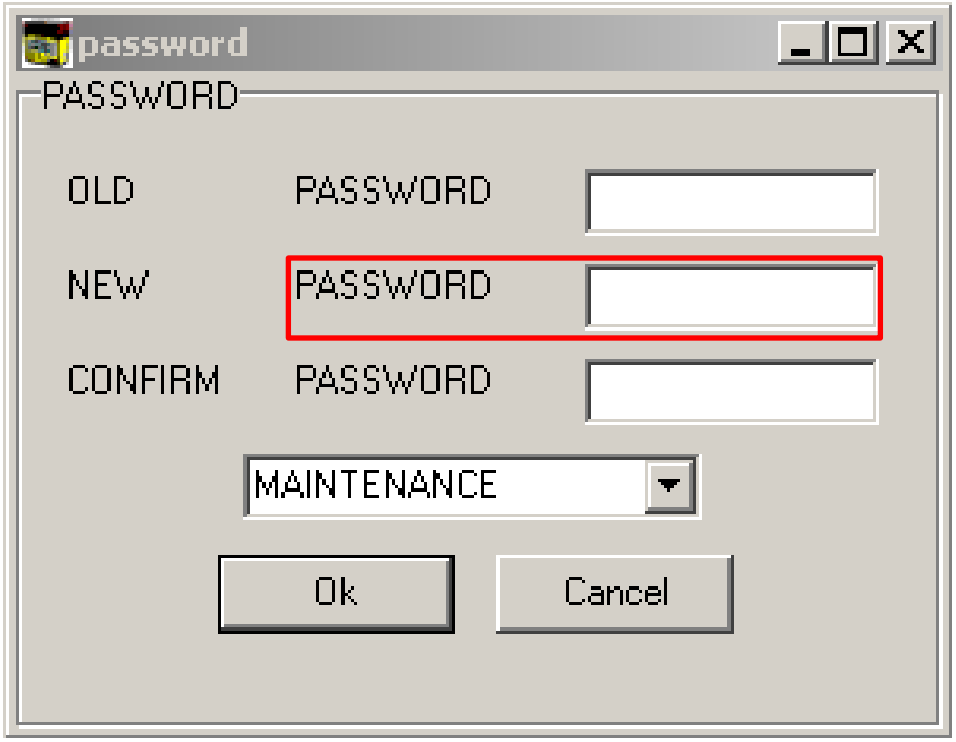
BM25 Password COM2100



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password COM2100 – To change the password, first type in the old password.

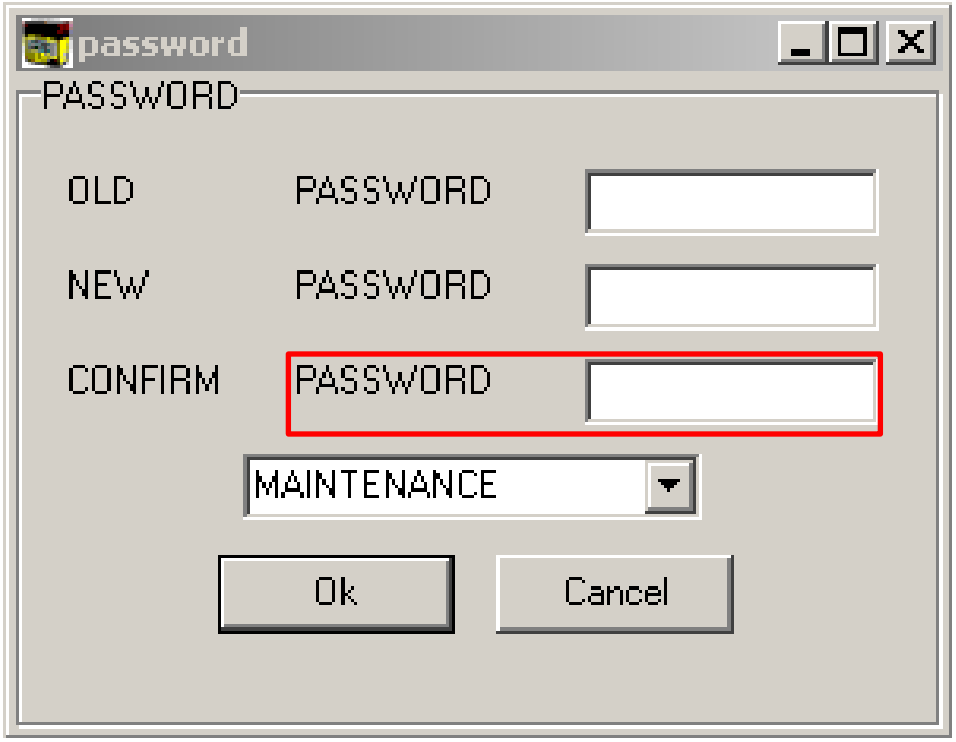
BM25 Password COM2100



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password COM2100 – Now type in the new password.

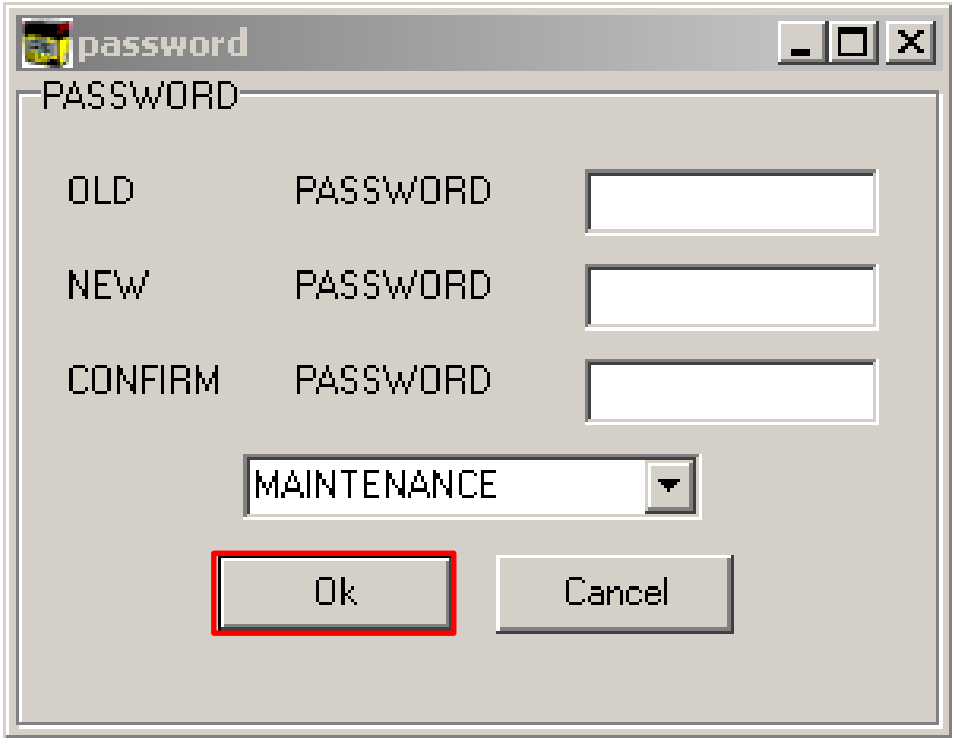
BM25 Password COM2100



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password COM2100 – Then type in the new password again to confirm.

BM25 Password COM2100

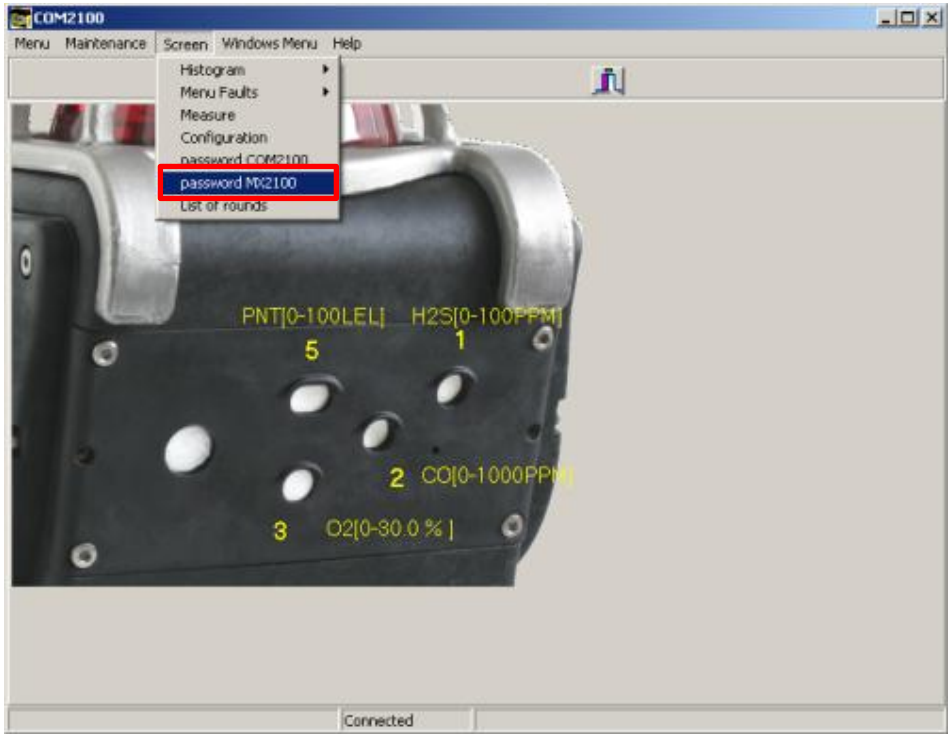


Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password COM2100 – Then type in the new password again to confirm.

Click Ok to accept.

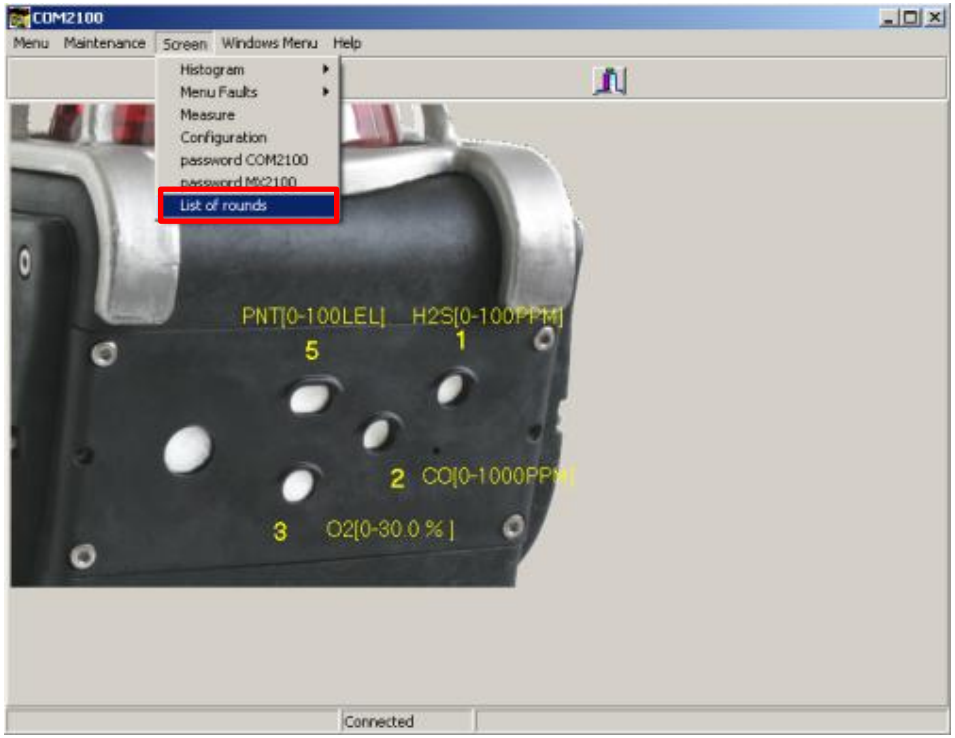
BM25 Password MX2100



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

password MX2100 – This option is not available for the BM25.

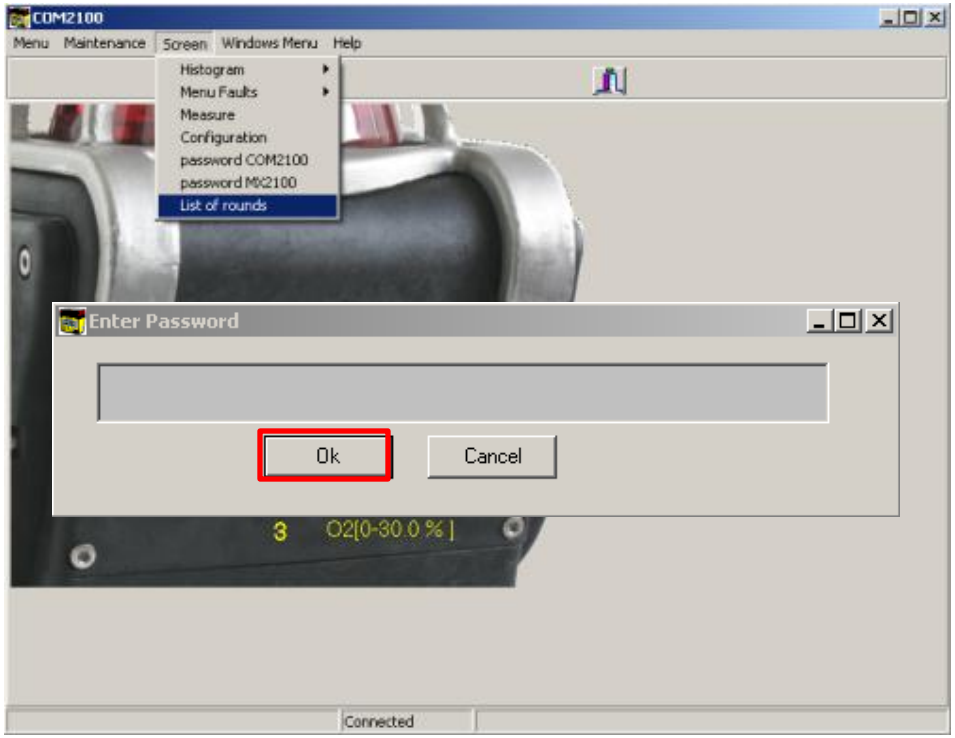
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

List of rounds – Through this option the user can develop a list of names or locations available to the user through the Select Location screen.

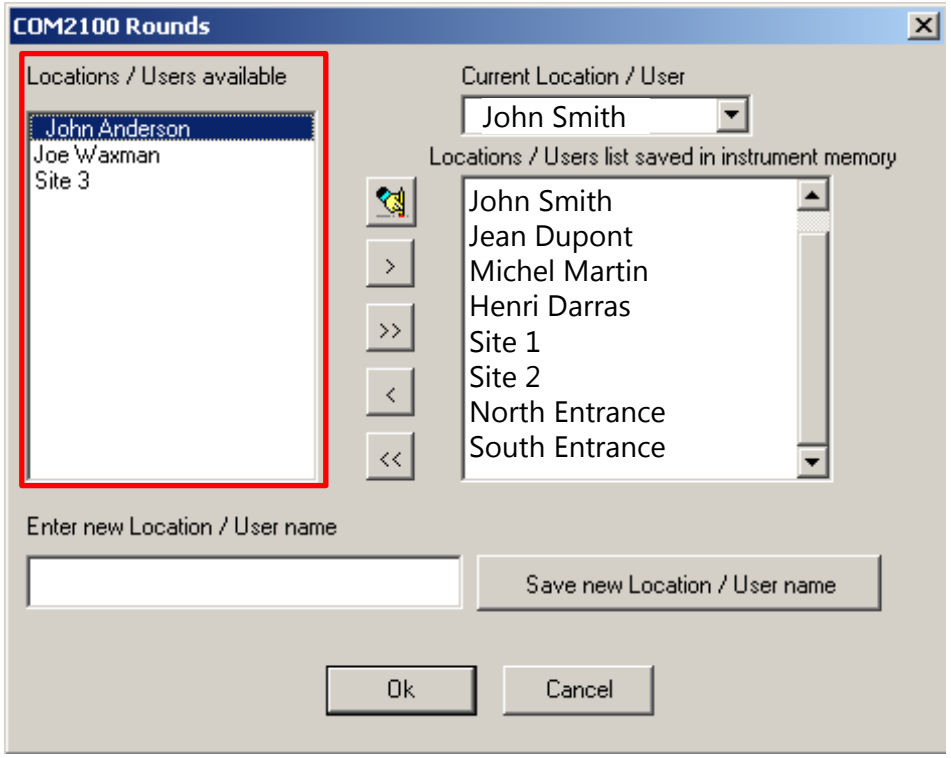
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

List of rounds – To gain access the user must first type in their access code (defaulted to 1000) then click Ok.

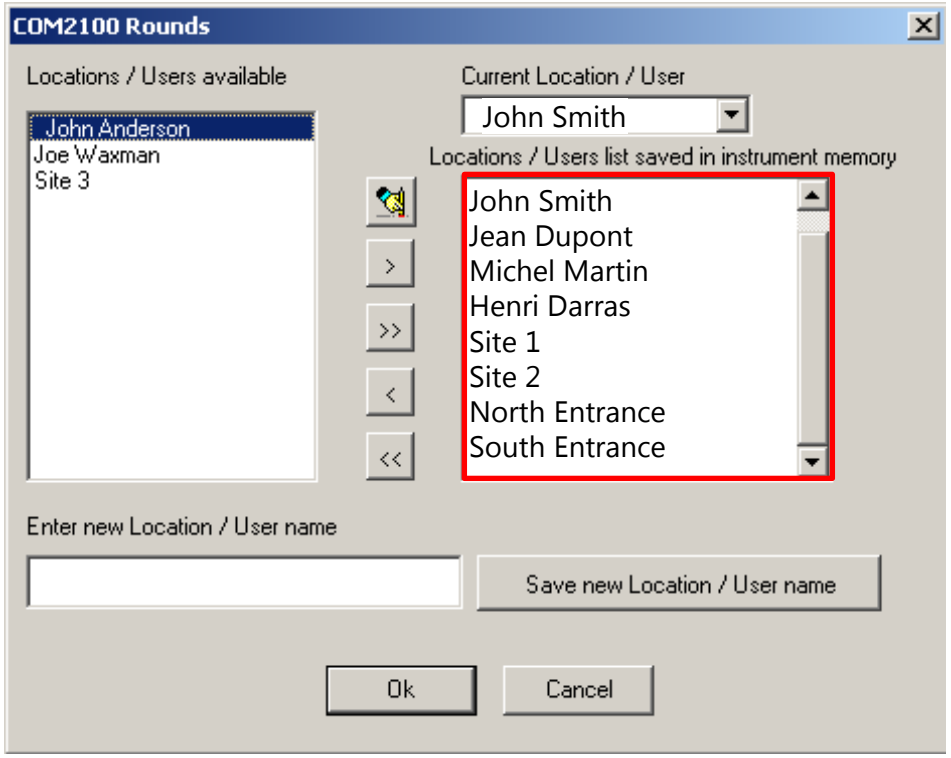
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Locations / User available – This will show a list of available user names and/or locations that may be added into the BM25.

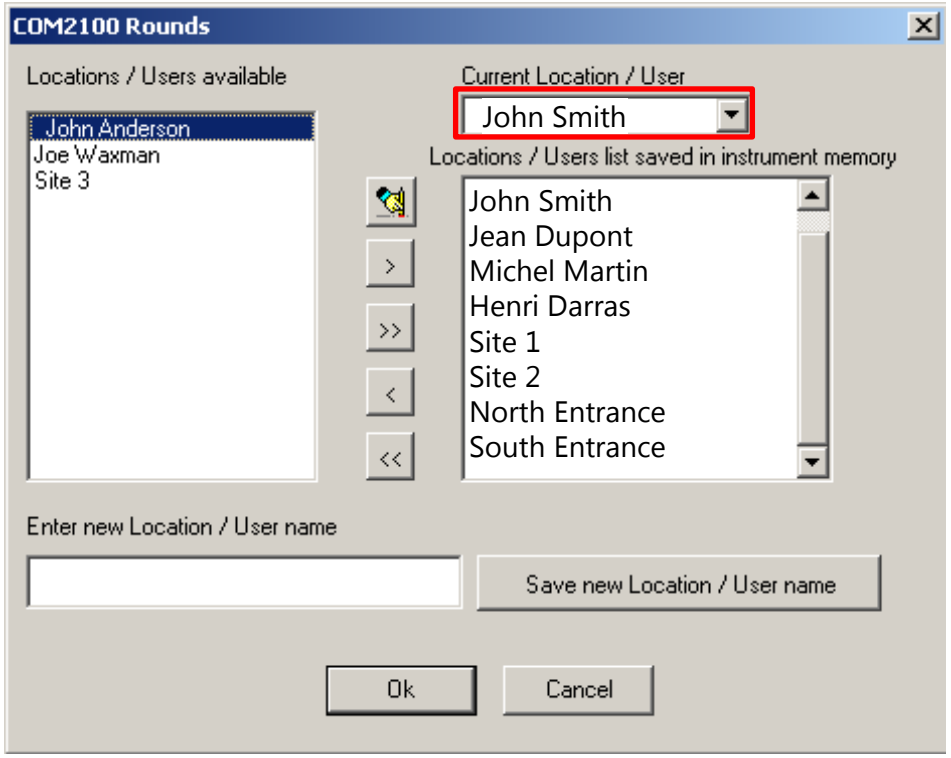
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Locations / User list saved in instrument memory – This will show a list of names and/or location already saved in the BM25's memory.

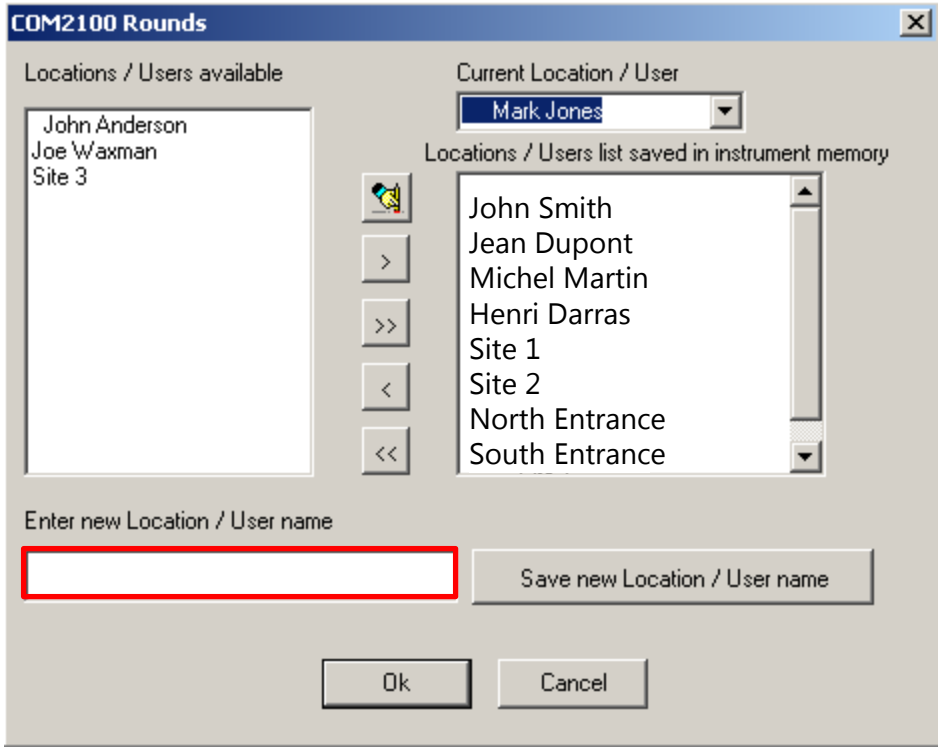
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Current Location / User– This will display the current name already selected for the BM25.

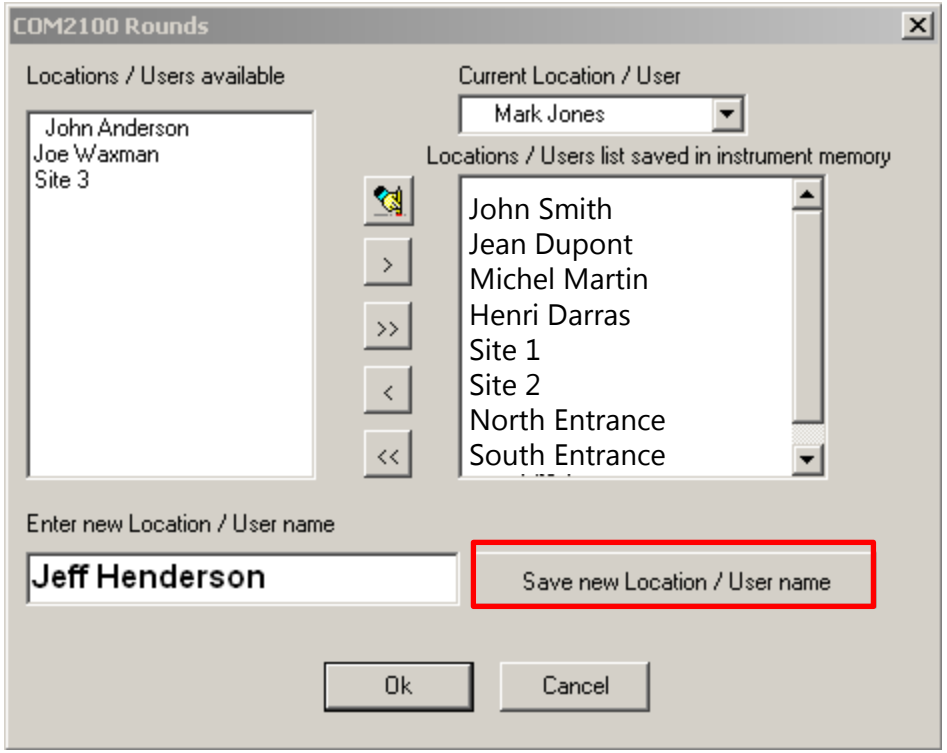
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Enter new Location/User name – Through this function, the user can add a user or a site name to the "Locations/User Available" list.

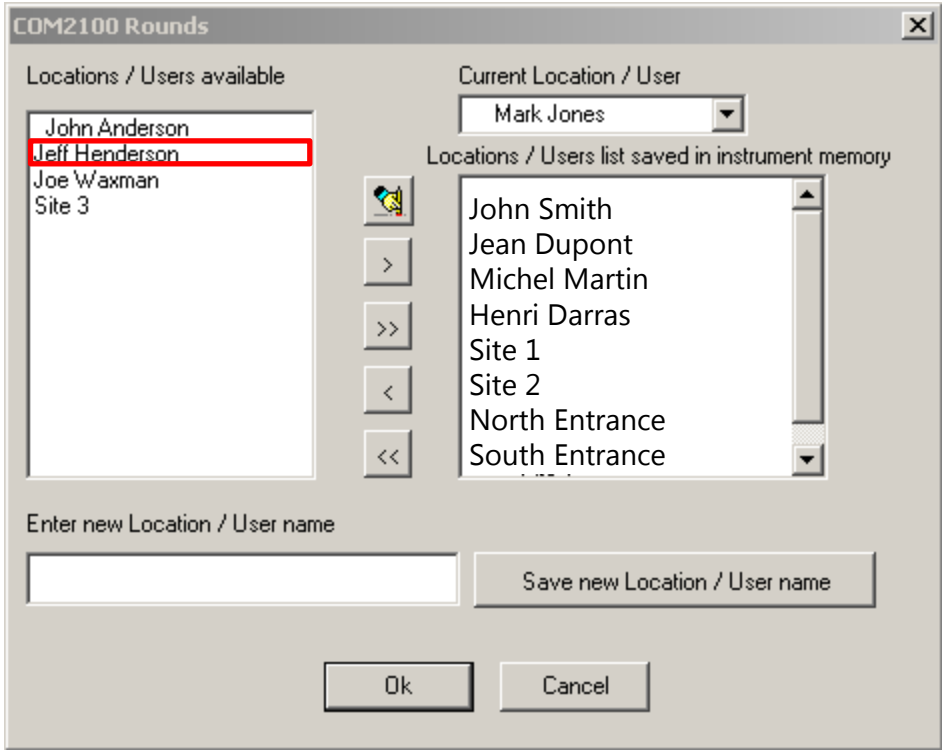
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Enter new Location/User name – To add a name, type the name in and click “Save new Location/User” name.

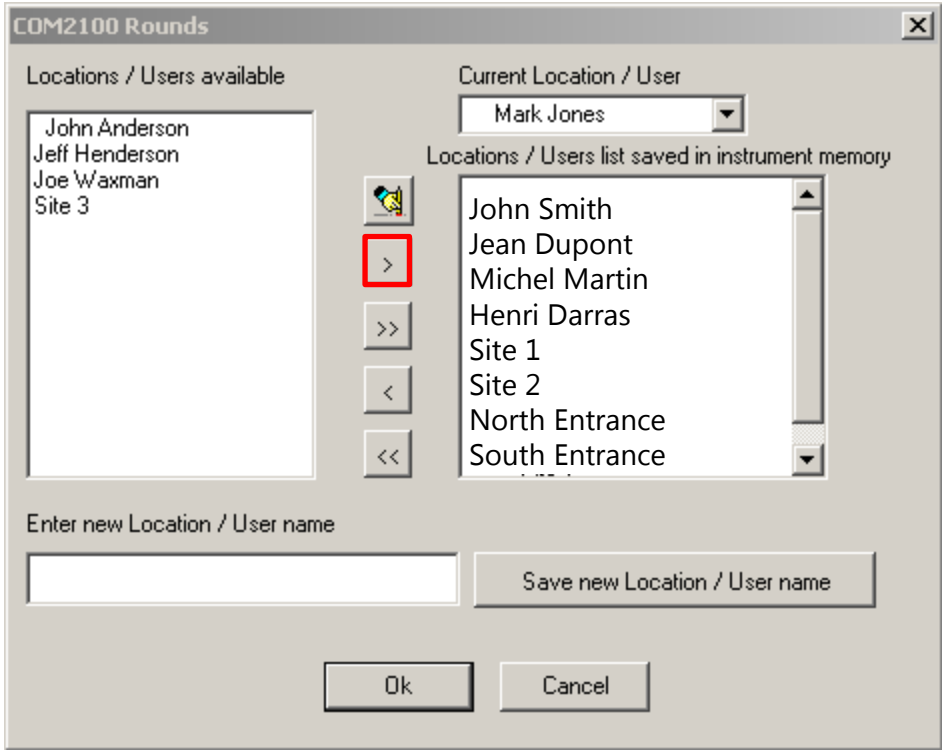
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Enter new Location/User name – The name has now been added to the “Locations/Users available” list.

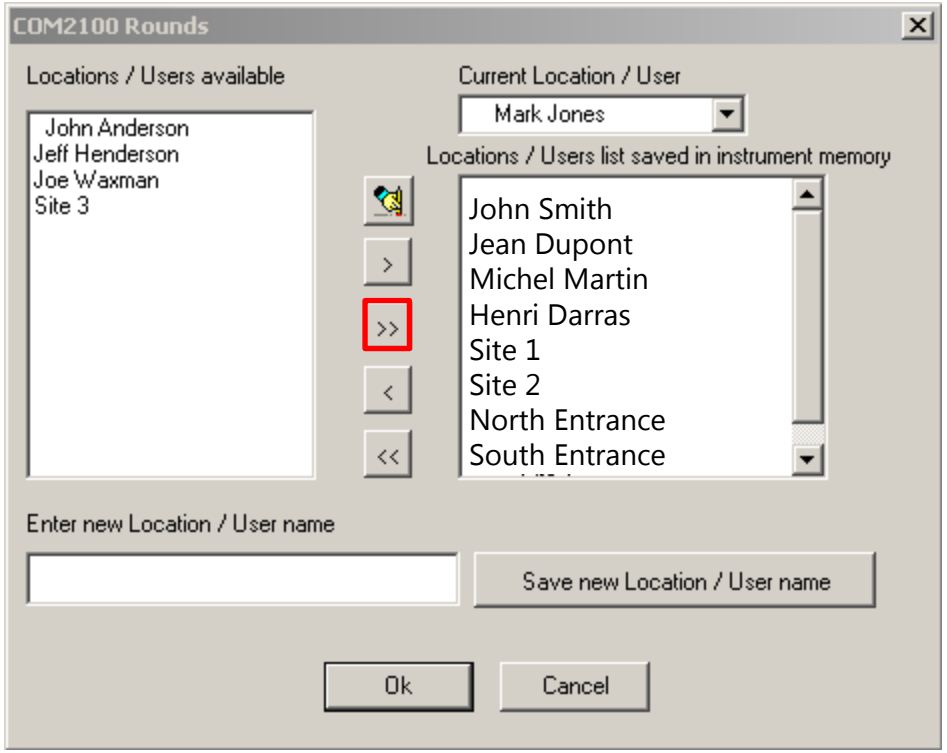
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

To add a name from the “Locations/User available” list to the “Location/User list saved in instrument memory” list, click on the arrow icon.

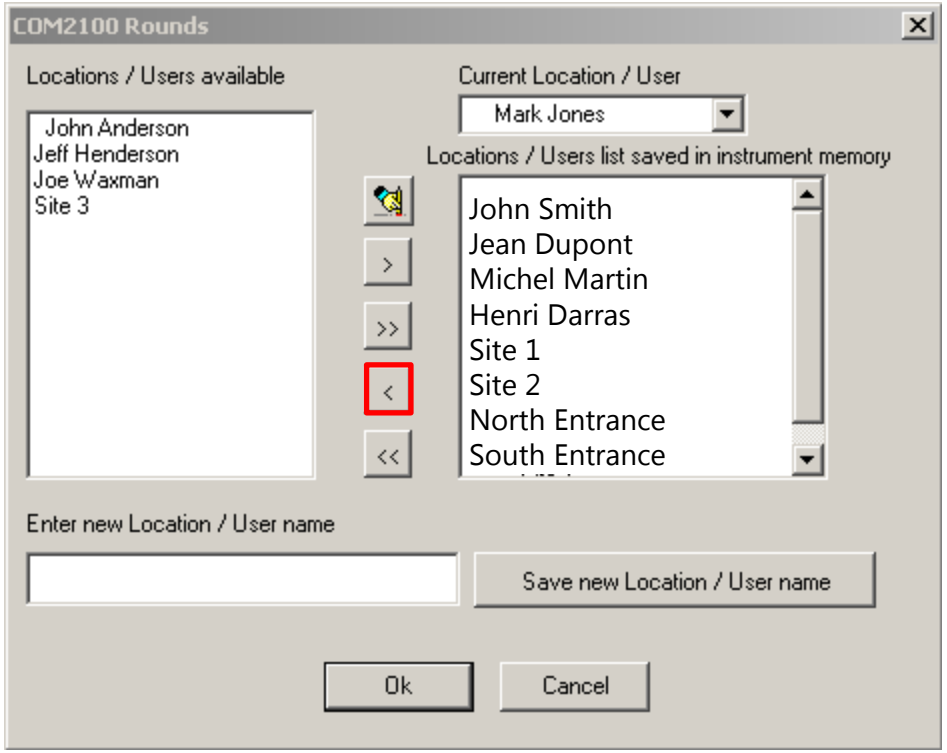
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

To add all the names from the “Locations/User available” list to the “Location/User list saved in instrument memory”, click the double arrow icon.

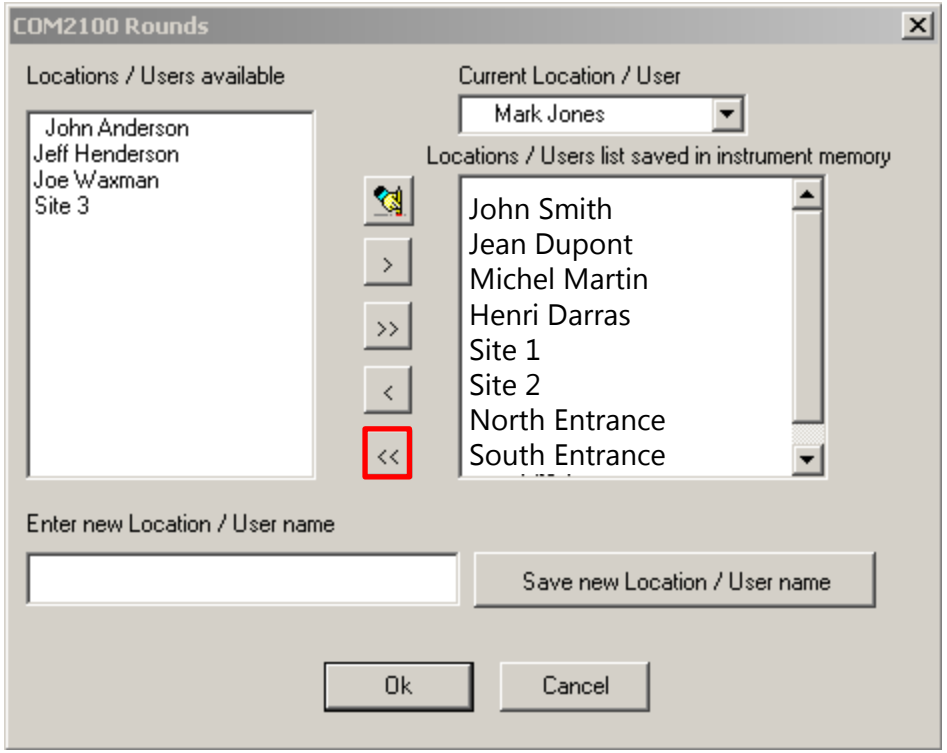
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

To remove a name from the "Location/User list saved in instrument memory" list, click the left arrow.

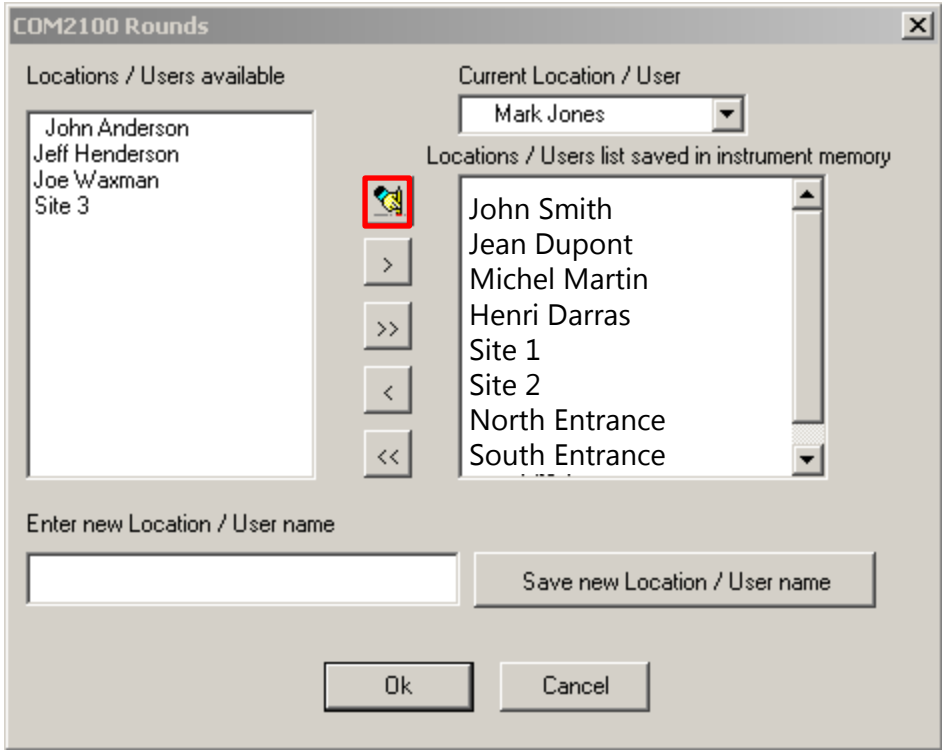
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

To remove all names from the "Location/User list saved in instrument memory" list, click the left double arrow.

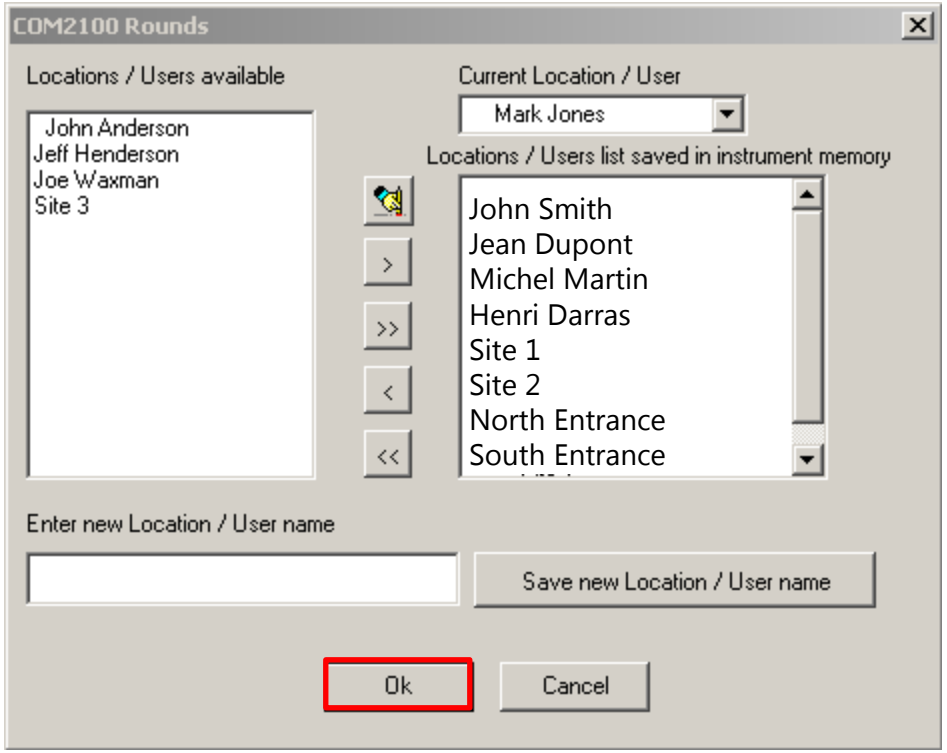
BM25 List of Rounds



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

The top icon allows the user to completely delete the name from both lists.

BM25 List of Rounds

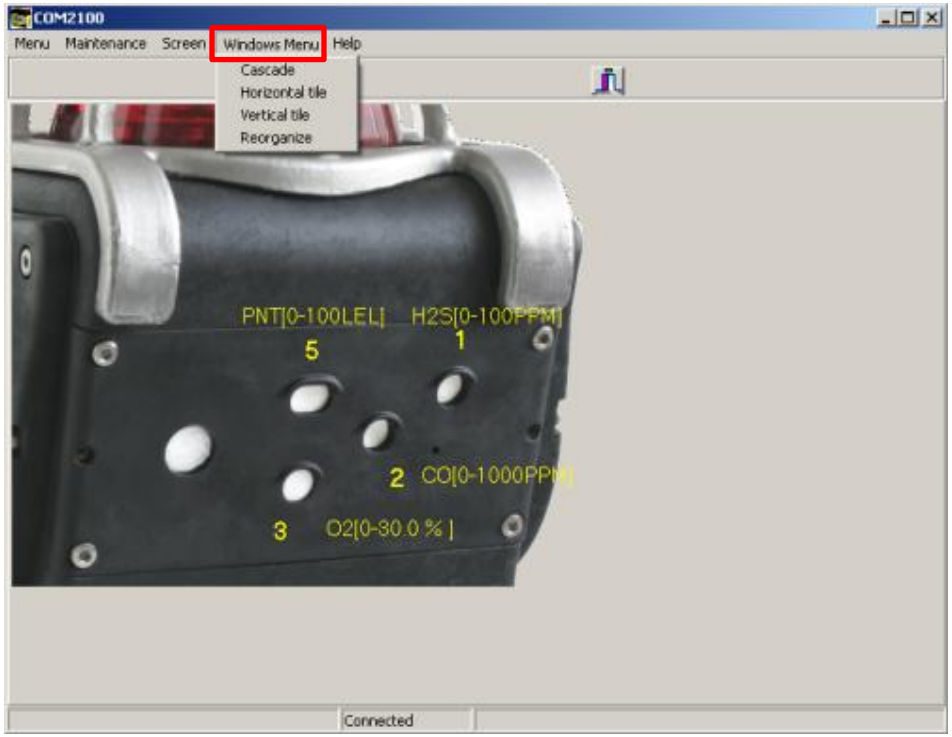


Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

The top icon allows the user to completely delete the name from both lists.

Click Ok to confirm the changes made.

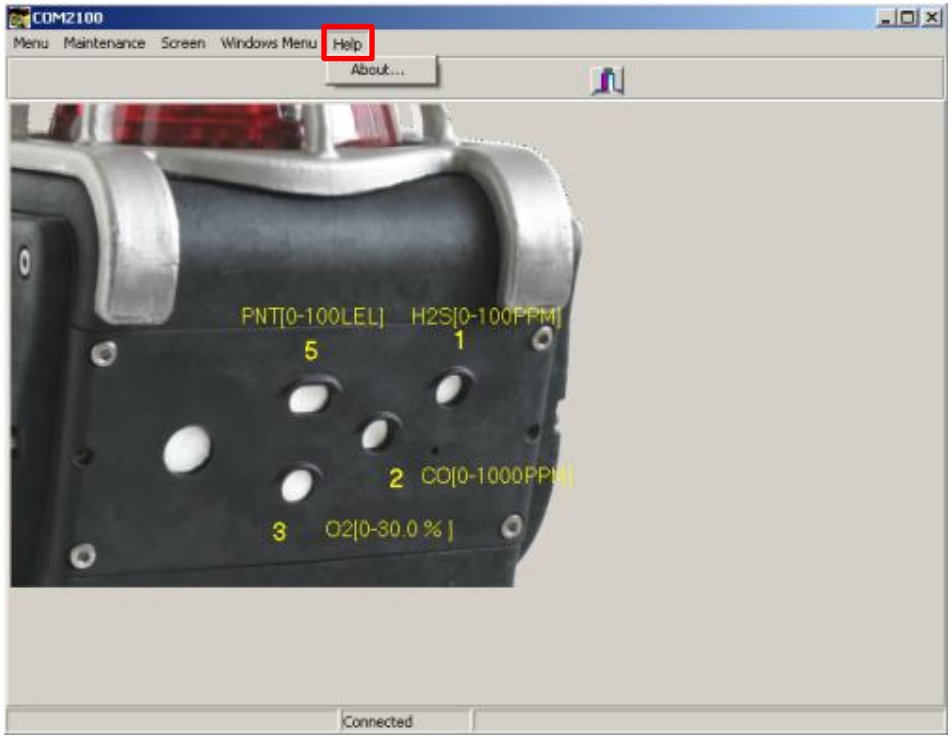
BM25 Windows Tab



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Windows Menu – This allows the user to organize their screen in four different options.

BM25 Help Tab



Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Help – Through Help the user will have access the About screen.

BM25 Help Tab

Screen – Under this dropdown, the user will have access to the BM25 datalog download and screen options.

Help – Through this screen the COM2100 software version will be displayed.

Back

BM25
Maintenance
Module 7

Back

BM25 Maintenance

The BM25 was designed so that basic maintenance can be performed on the unit allowing for maximum performance with minimal downtime. Items like sensors, for example, are consumable items therefore may need to be changed out periodically. The instrument itself does have a two year warranty and can be serviced at an authorized repair facility.

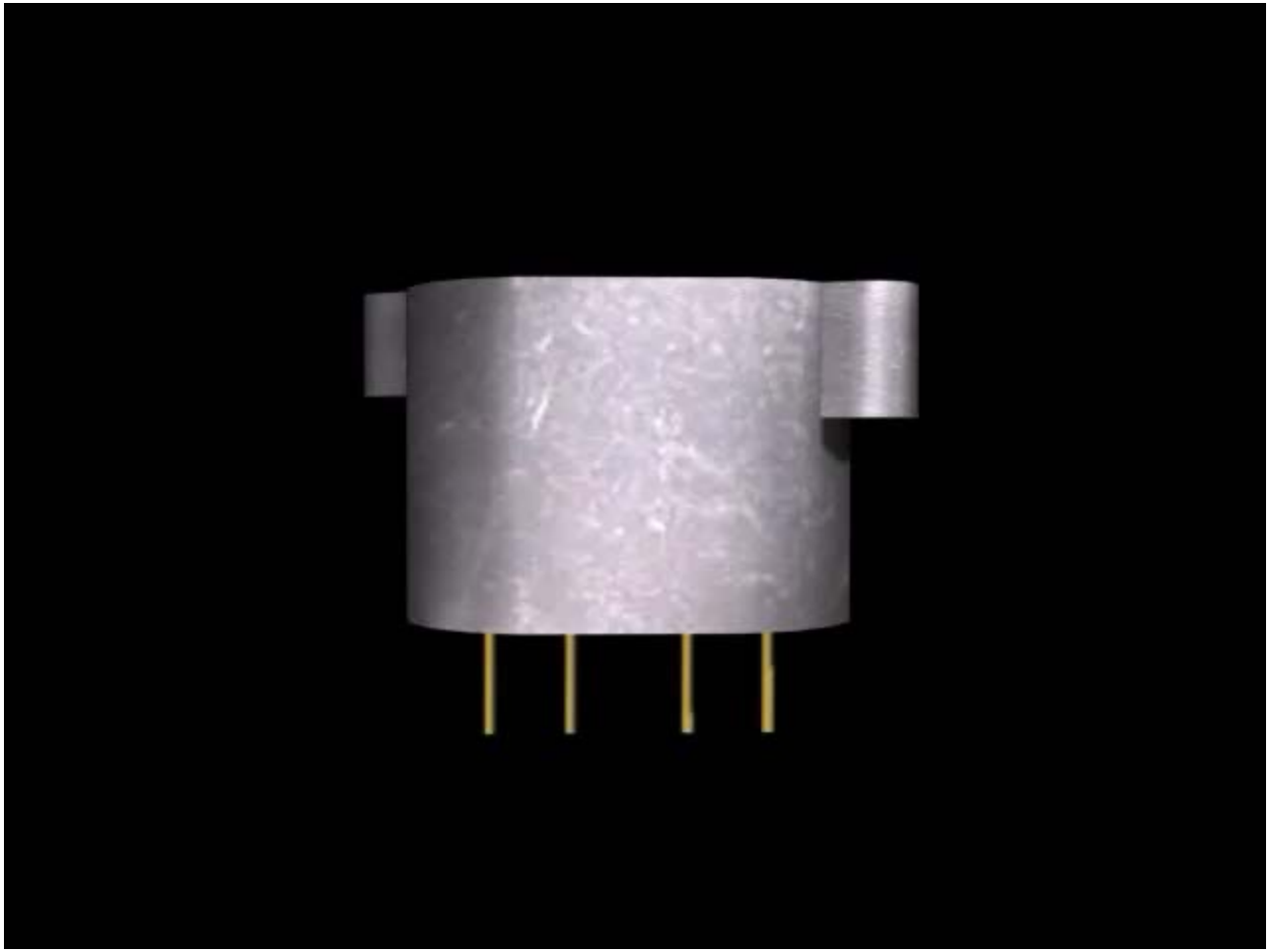
Contact:

Oldham S.A.S. at support@oldhamgas.com

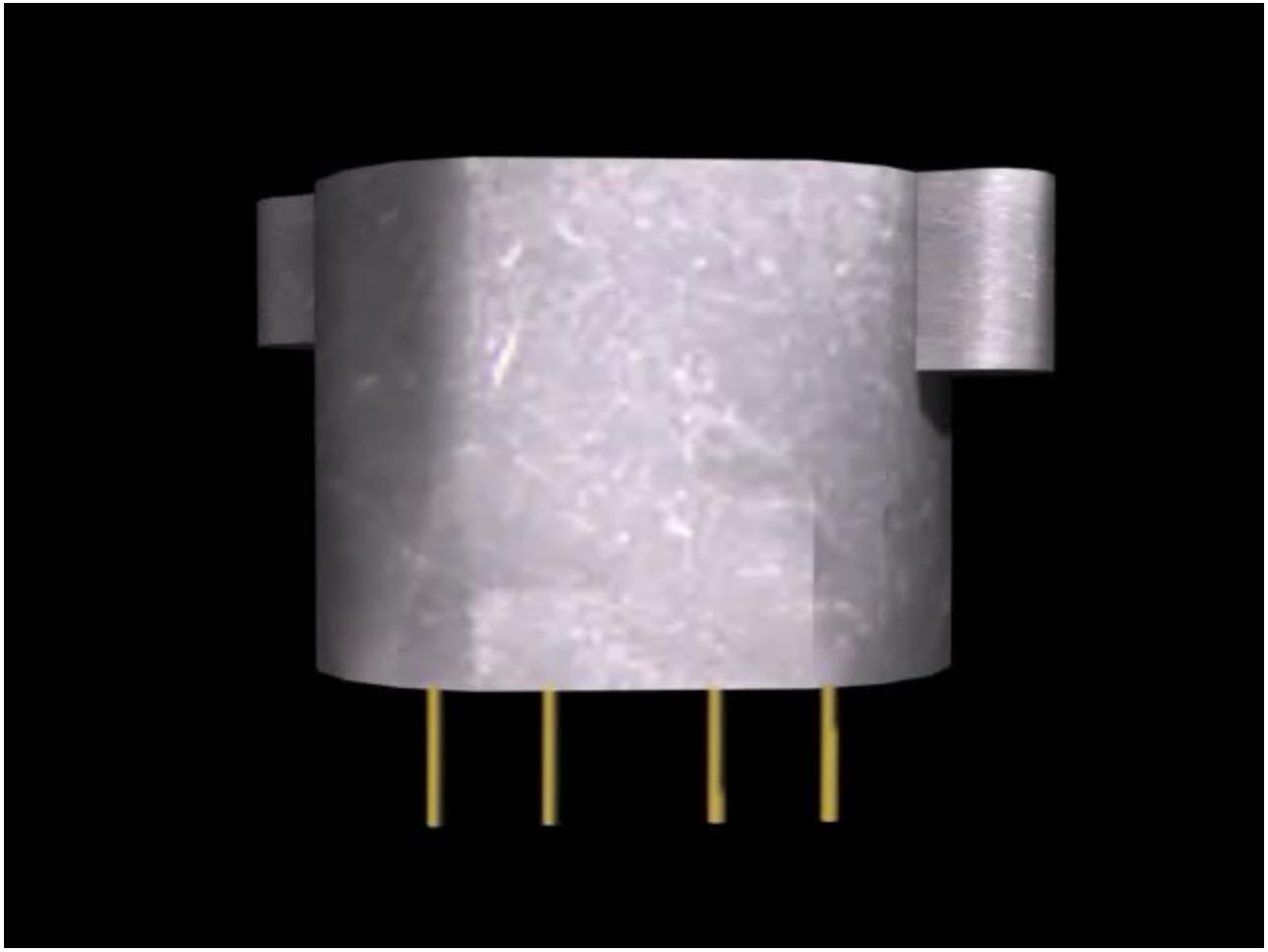
Sensor Technology

The sensor is the heart of the unit because it is what detects the gas. Considering this, it can also be the weak link. Understanding the operations of this technology is imperative to help extend the life of these sensors and maximize the BM25's overall performance.

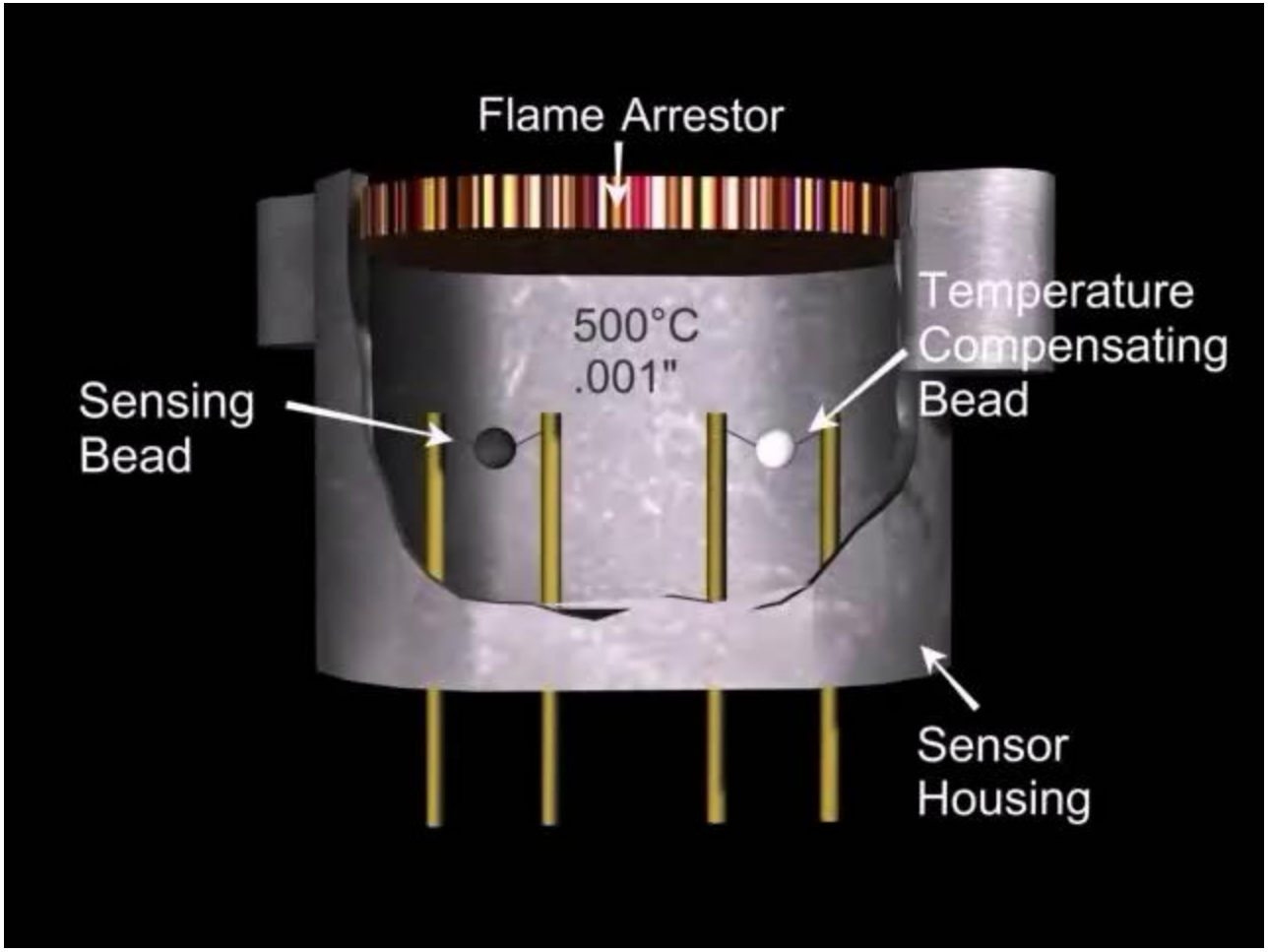
BM25 Catalytic Diffusion



BM25 Catalytic Diffusion



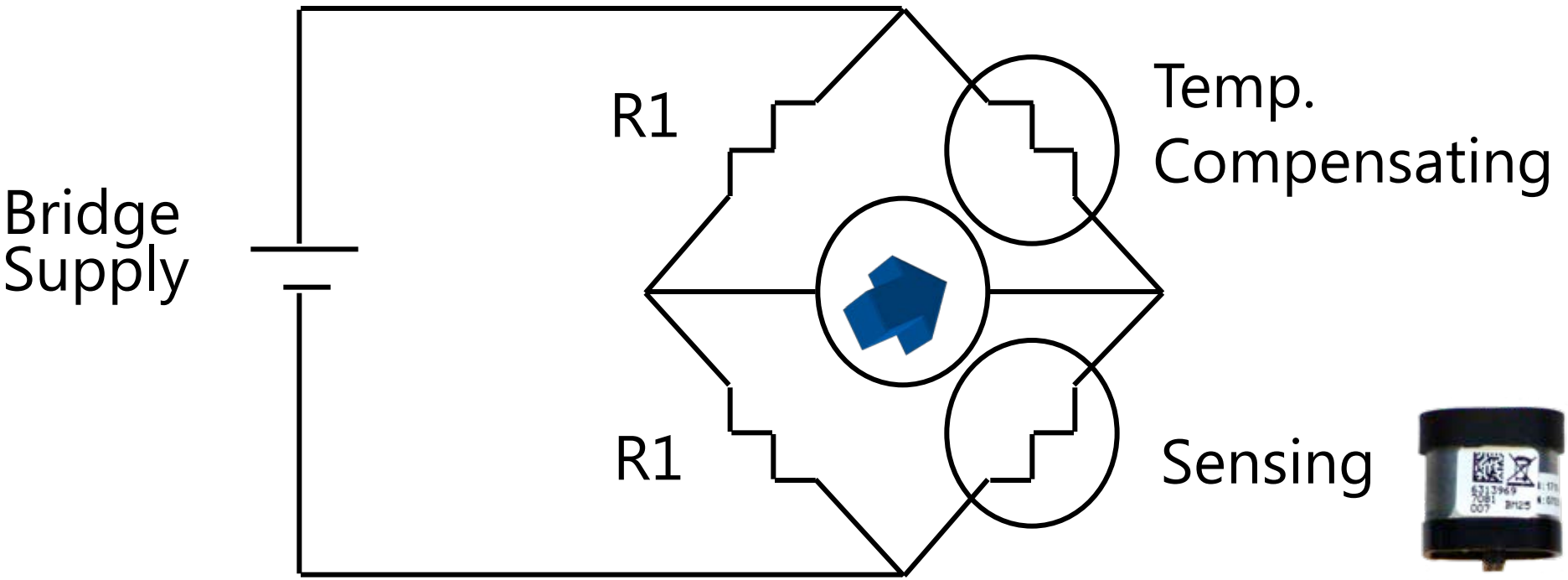
BM25 Catalytic Diffusion



BM25 Catalytic Diffusion

Catalytic Diffusion (LEL) Sensor

Wheatstone Bridge Circuit



BM25 Catalytic Diffusion

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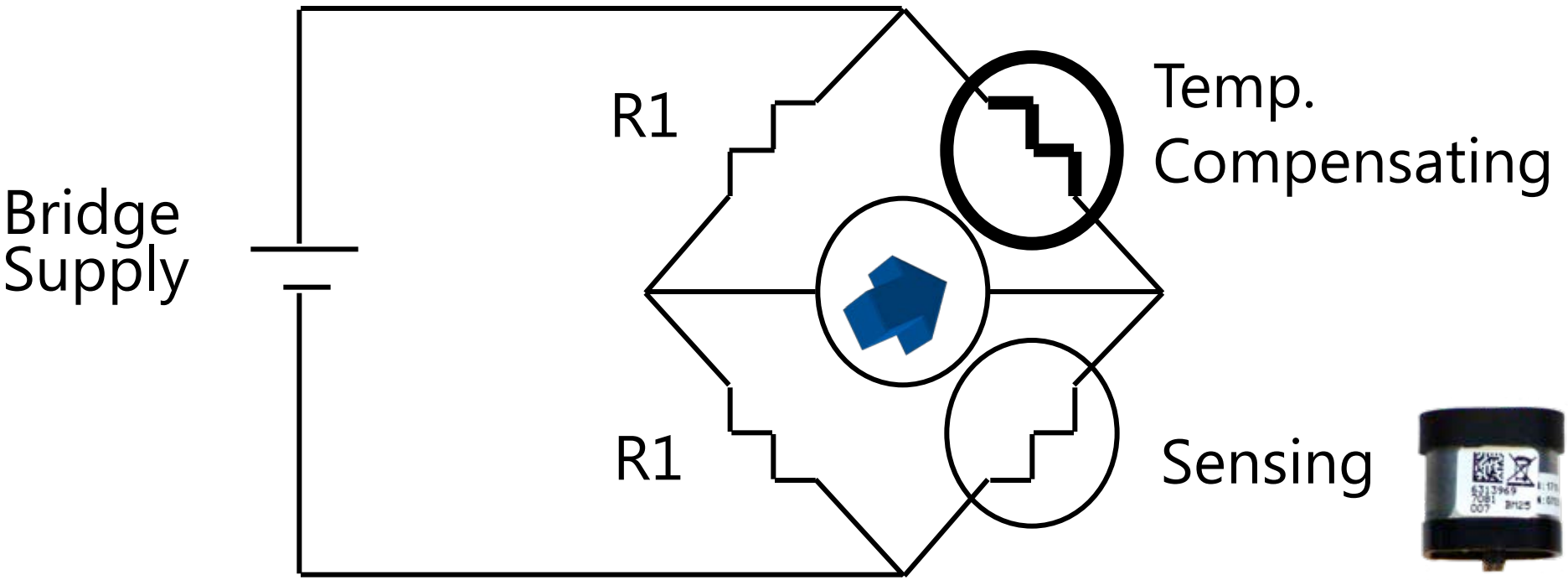
Wheatstone Bridge Circuit



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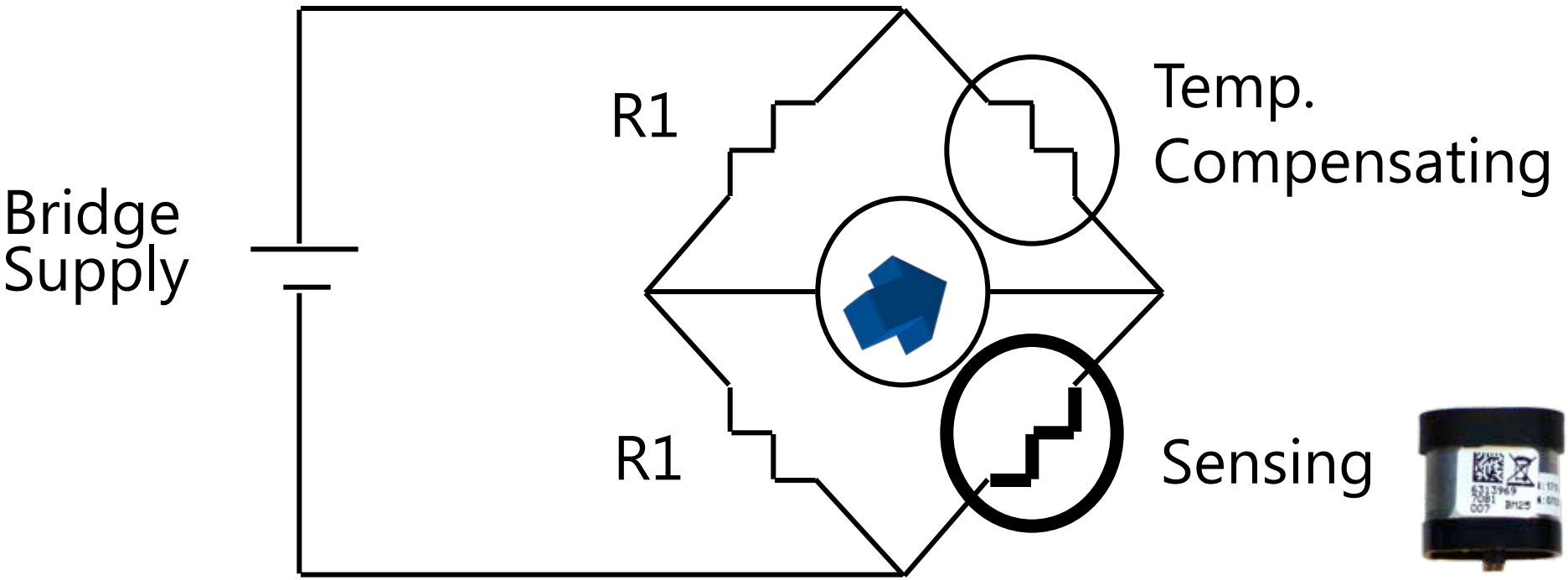

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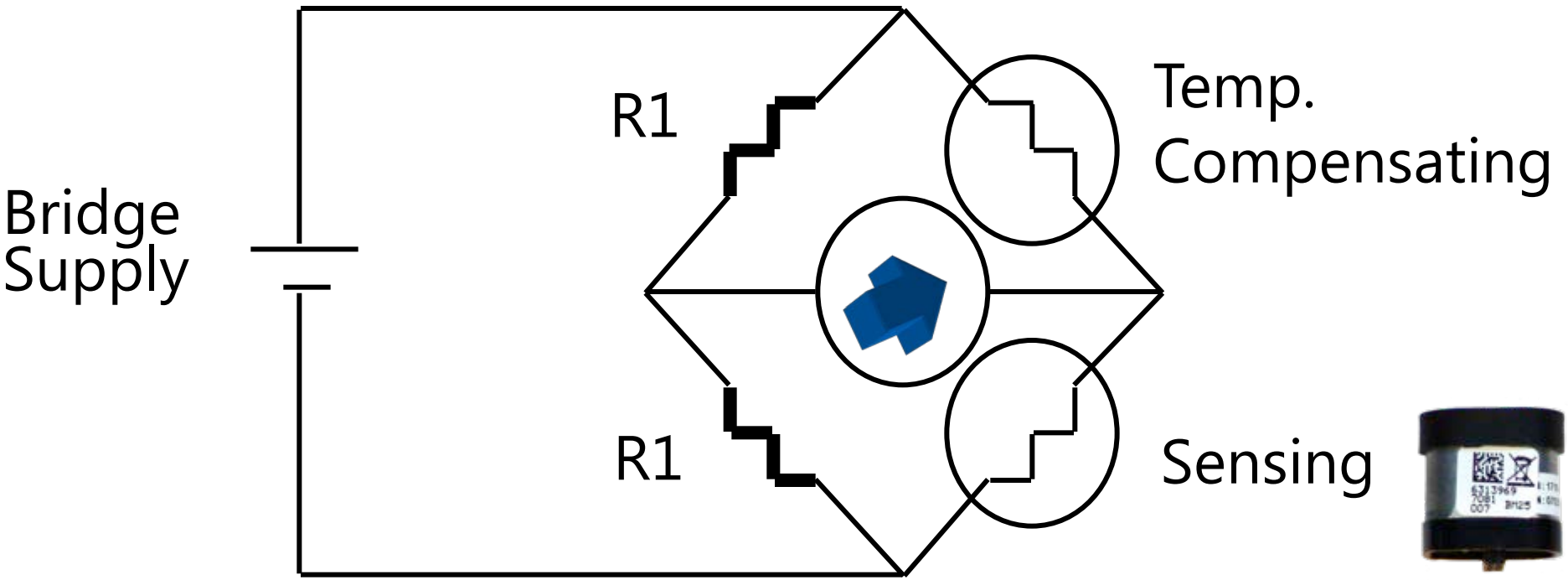

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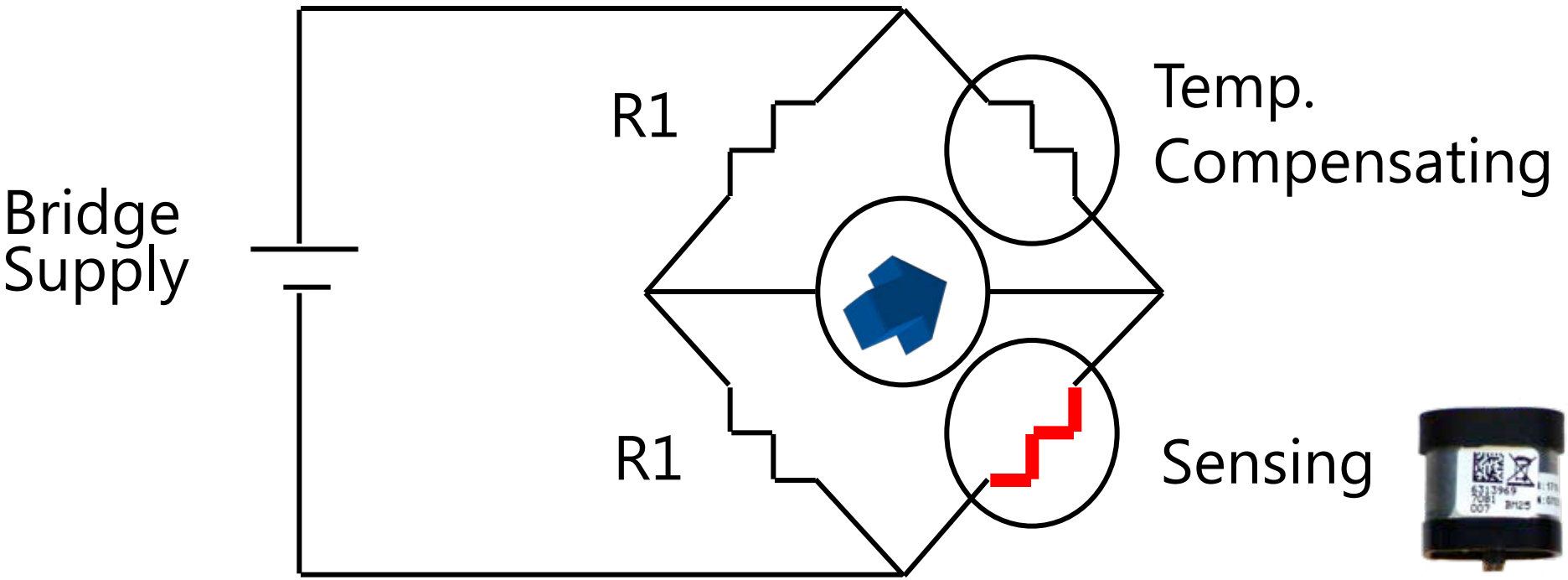
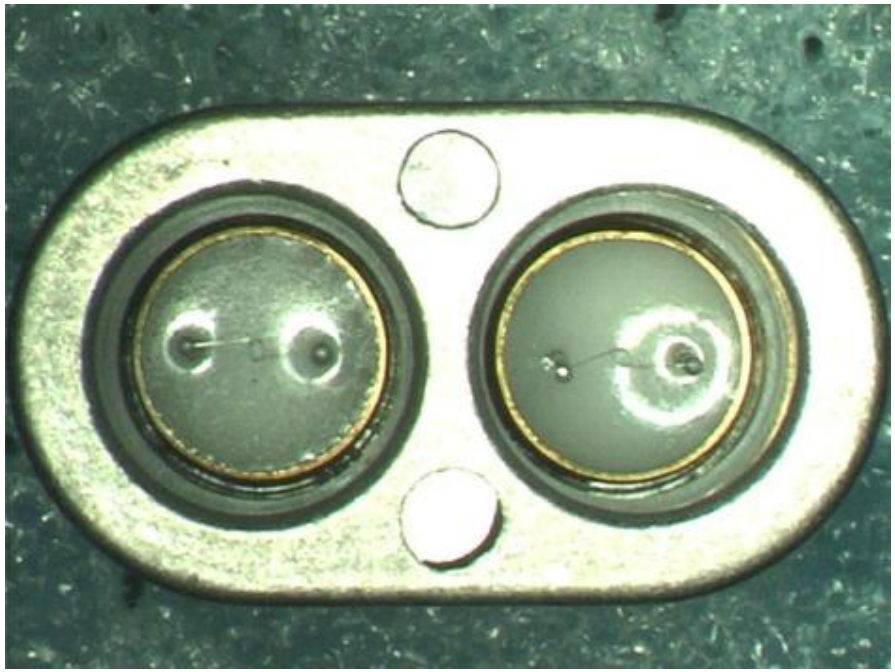
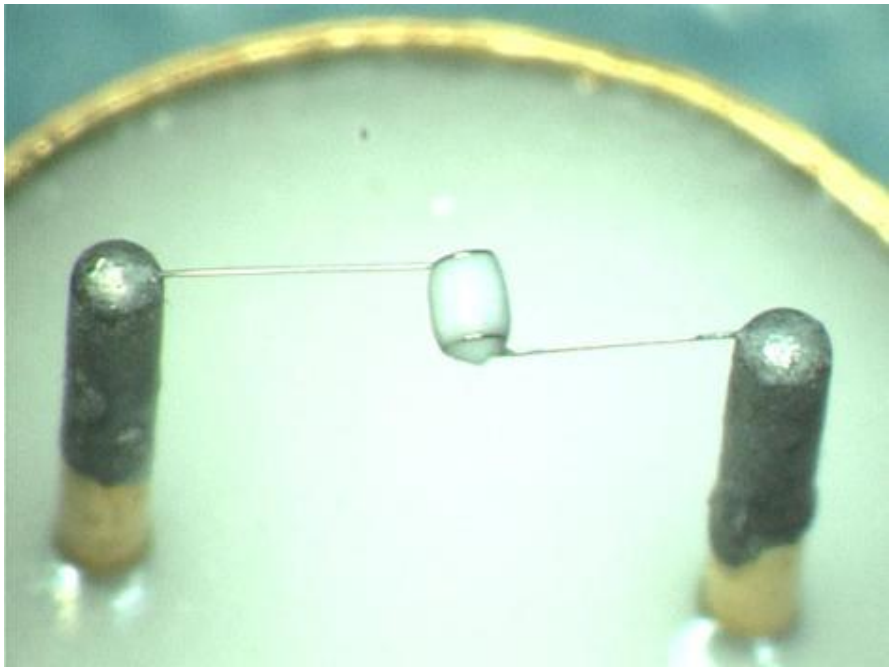
Wheatstone Bridge Circuit



Catalytic Diffusion (LEL) Sensor





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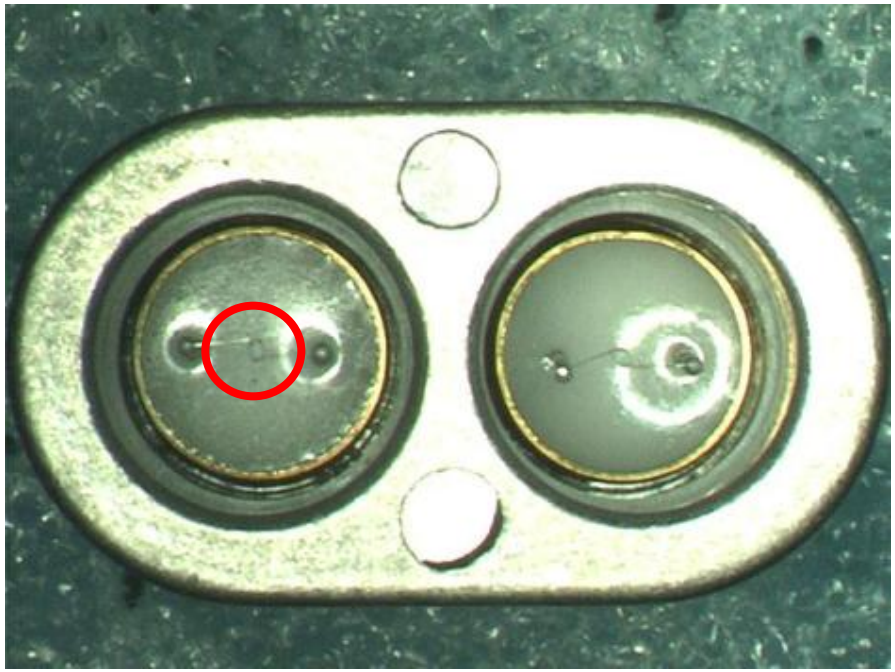

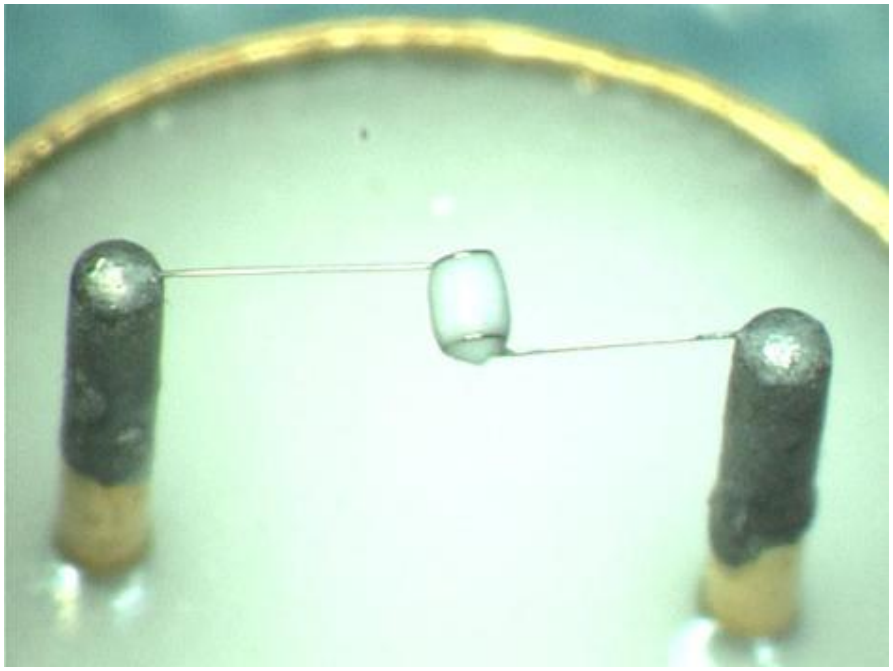

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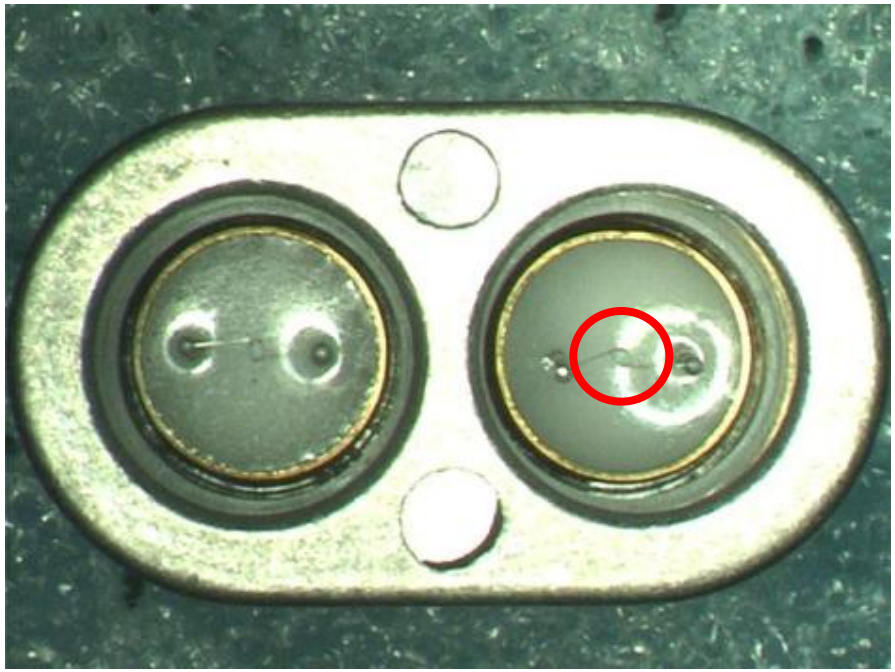

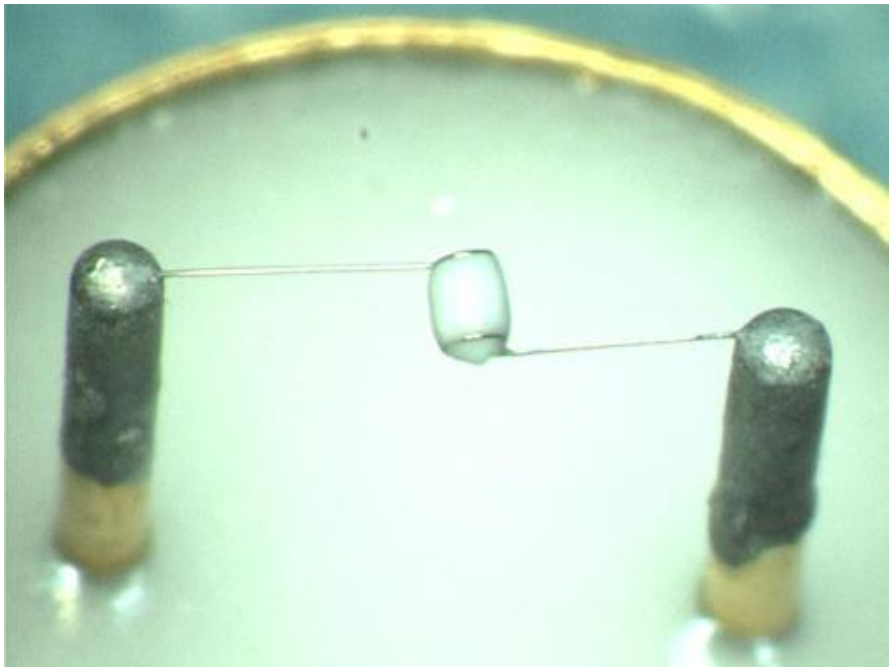

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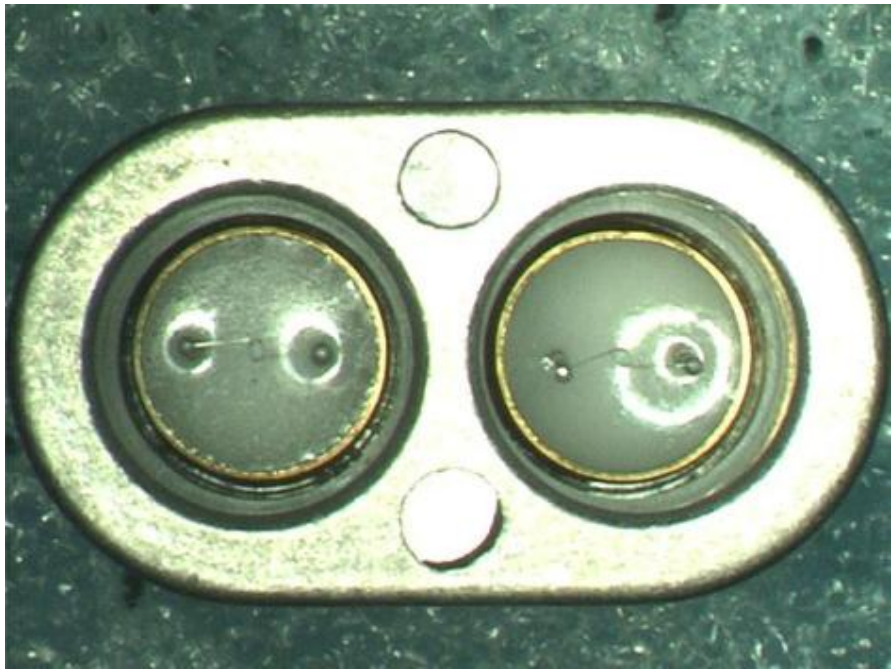

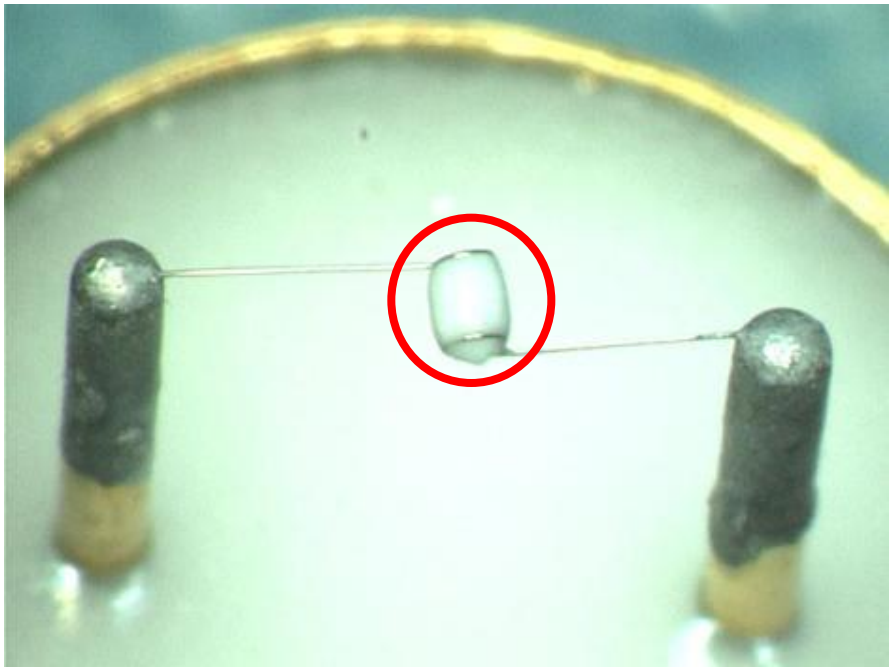

BM25 Catalytic Diffusion

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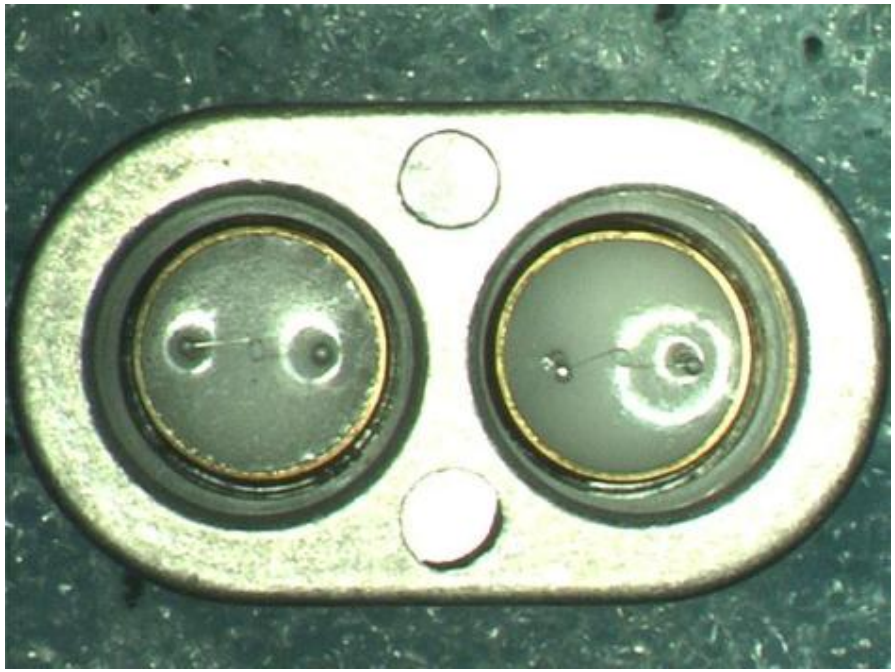

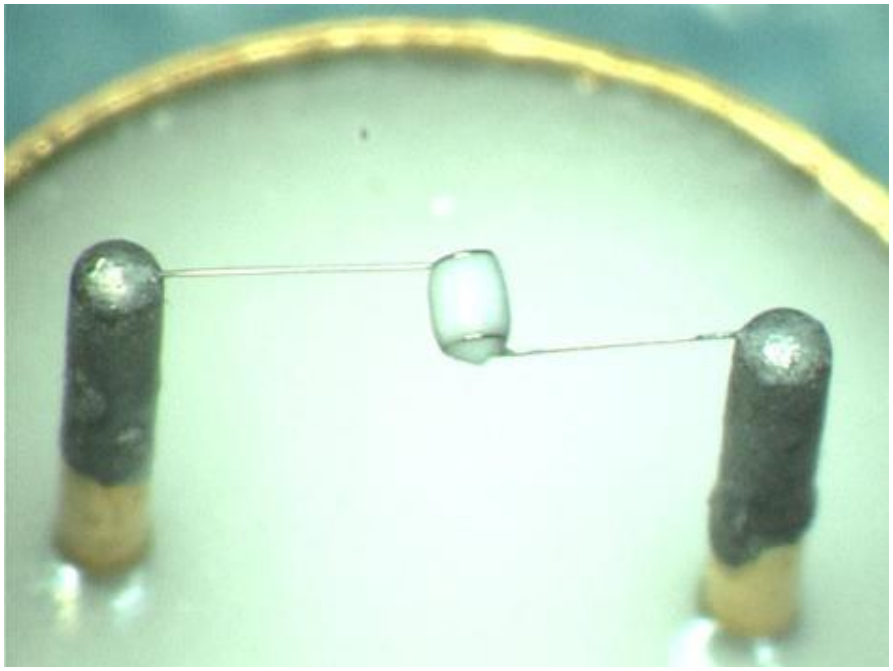

Warning: Must have at least 10% by volume Oxygen

BM25 LEL Poisons

Catalytic Diffusion (LEL) Sensor

Poisons

BM25 LEL Poisons

Catalytic Diffusion (LEL) Sensor

Poisons

Adhere to the catalyst bead

BM25 LEL Poisons

Catalytic Diffusion (LEL) Sensor

Poisons

Adhere to the catalyst bead

Damage all or part of the sensing bead

BM25 LEL Poisons

Catalytic Diffusion (LEL) Sensor

Poisons

Adhere to the catalyst bead

Damage all or part of the sensing bead

Sensor cannot recover

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Catalytic Diffusion (LEL) Sensor

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If exposed - calibrate

BM25 LEL Poisons

Catalytic Diffusion (LEL) Sensor

Poisons

Adhere to the catalyst bead

Damage all or part of the sensing bead

Sensor cannot recover

If exposed - calibrate

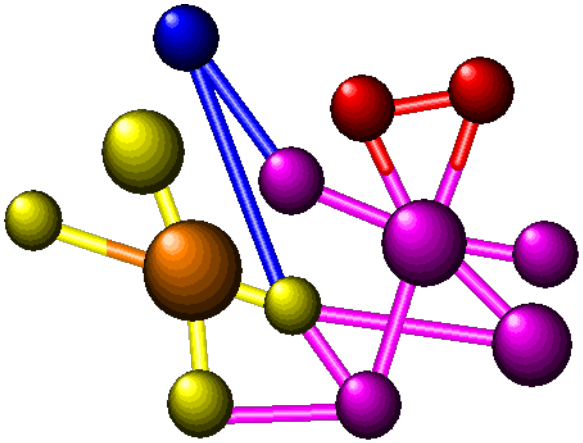
Most common

- RTV - silicone
- Armor -All

BM25 LEL Inhibitors

Catalytic Diffusion (LEL) Sensor

Inhibitors



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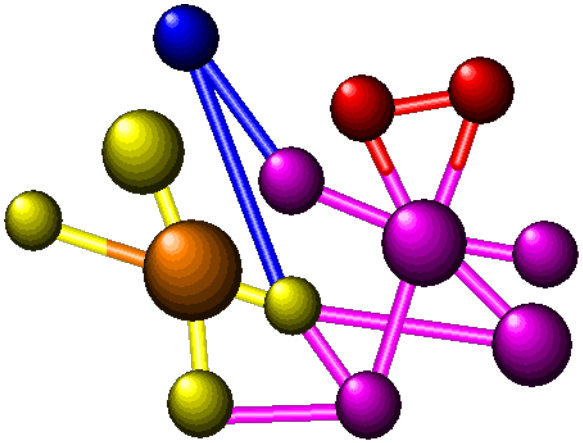
Catalytic Diffusion (LEL) Sensor

Inhibitors

Adhere to catalyst bead



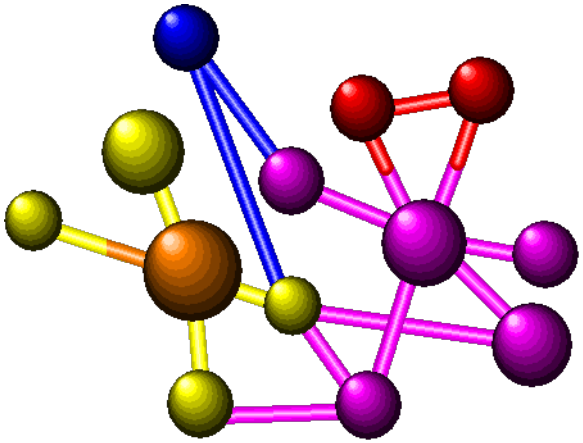
BM25 LEL Inhibitors

Catalytic Diffusion (LEL) Sensor

Inhibitors

Adhere to catalyst bead

Desensitize bead - affect long term life



BM25 LEL Inhibitors

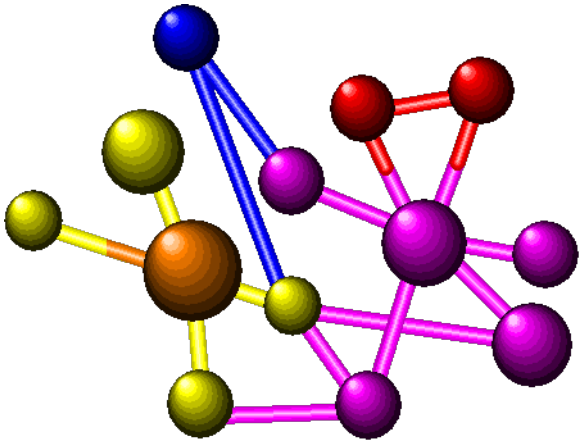
Catalytic Diffusion (LEL) Sensor

Inhibitors

Adhere to catalyst bead

Desensitize bead - affect long term life

Sensor - can partially recover



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Adhere to catalyst bead
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Sensor - can partially recover
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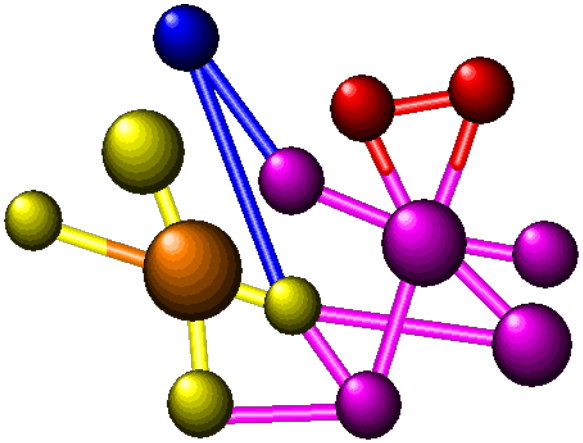

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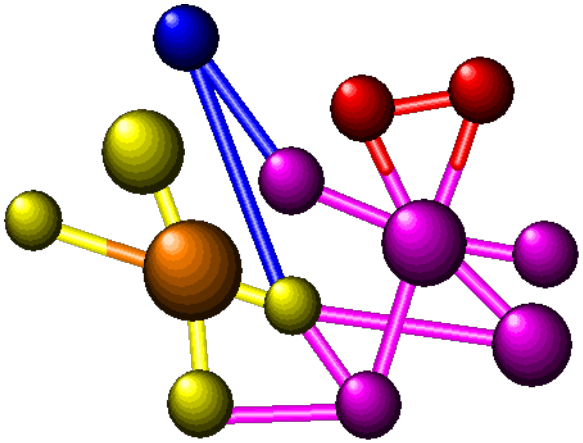

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Most common
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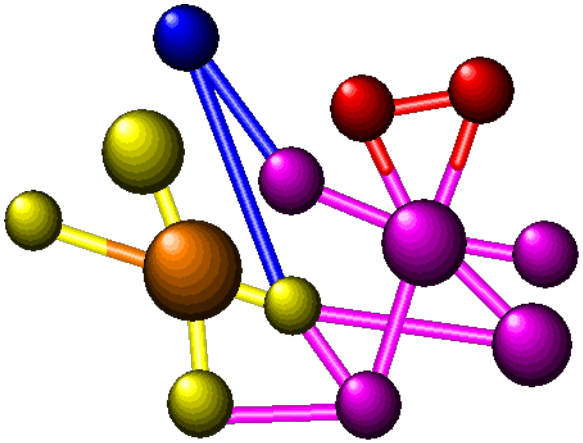

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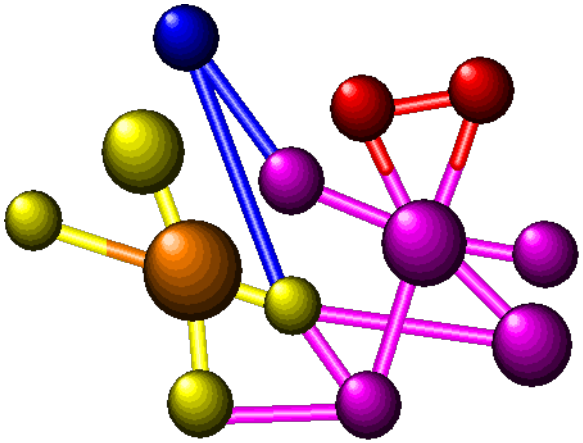

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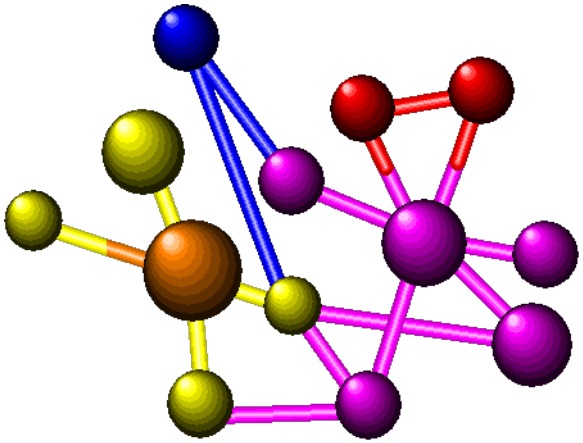

Adhere to catalyst bead
Desensitize bead - affect long term life
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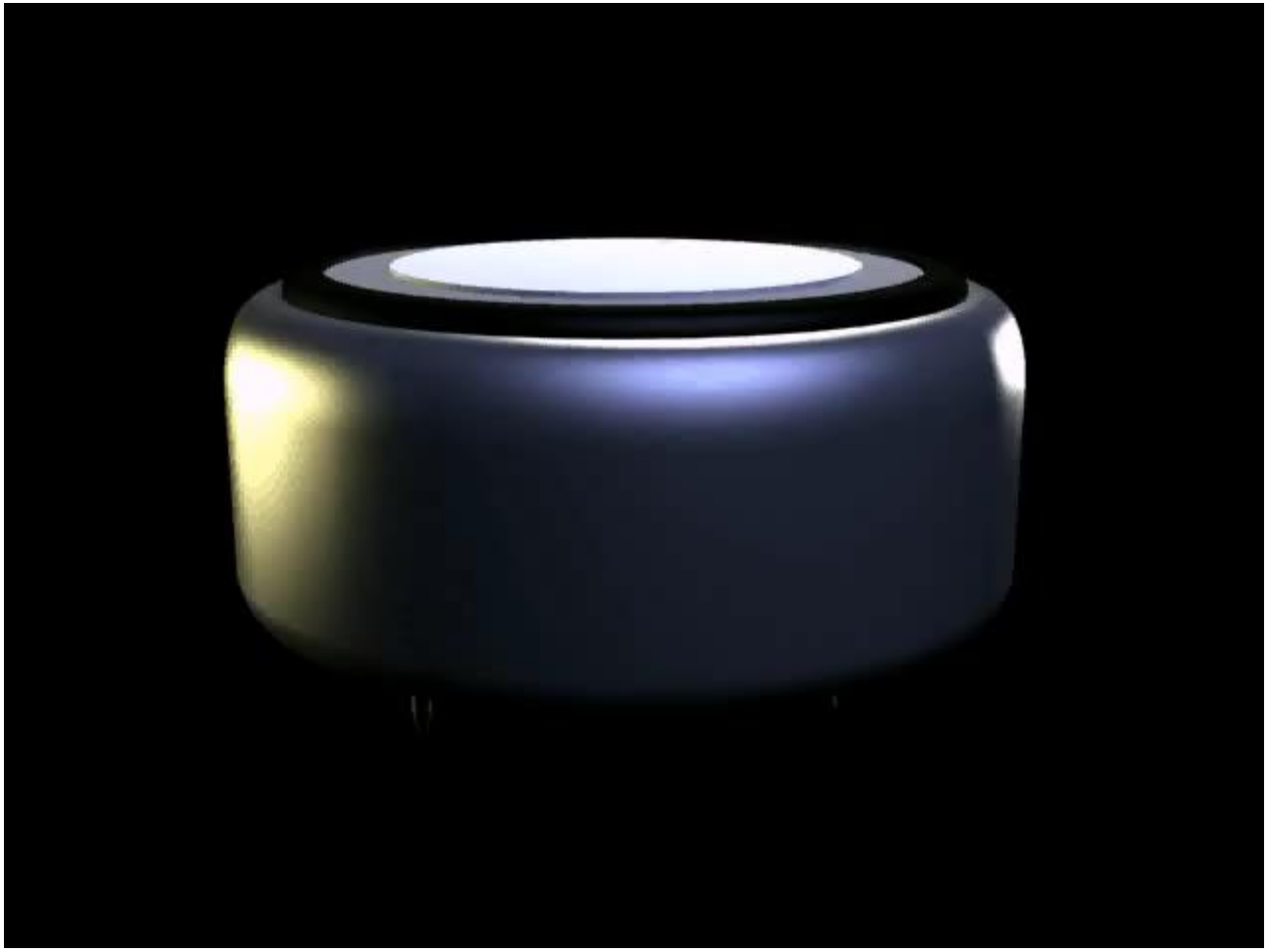
Most common

- Sulfur compounds
- Lead - tetraethyl lead (gas additive)
- Halogenated compounds – ozone depleters ex.- astatine, bromine, fluorine, chlorine and iodine

BM25 Electrochemical Sensor



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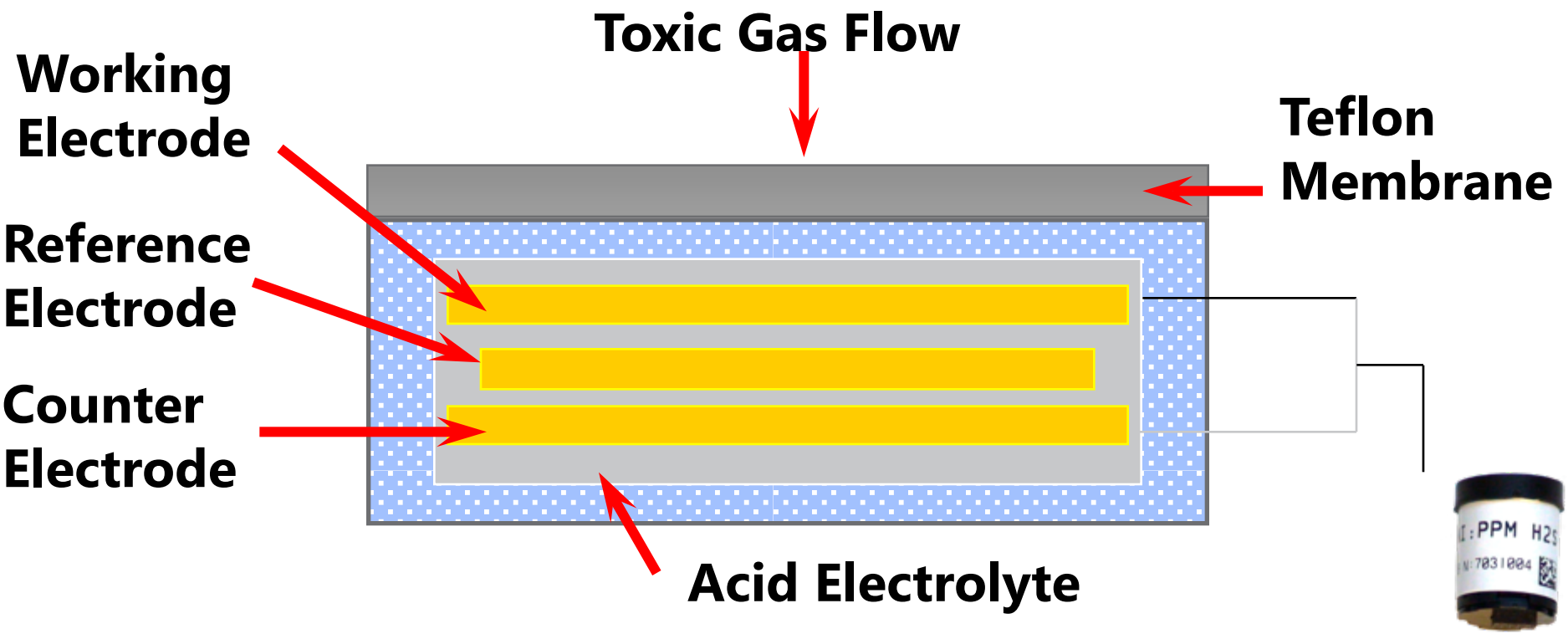

Electrochemical Sensor

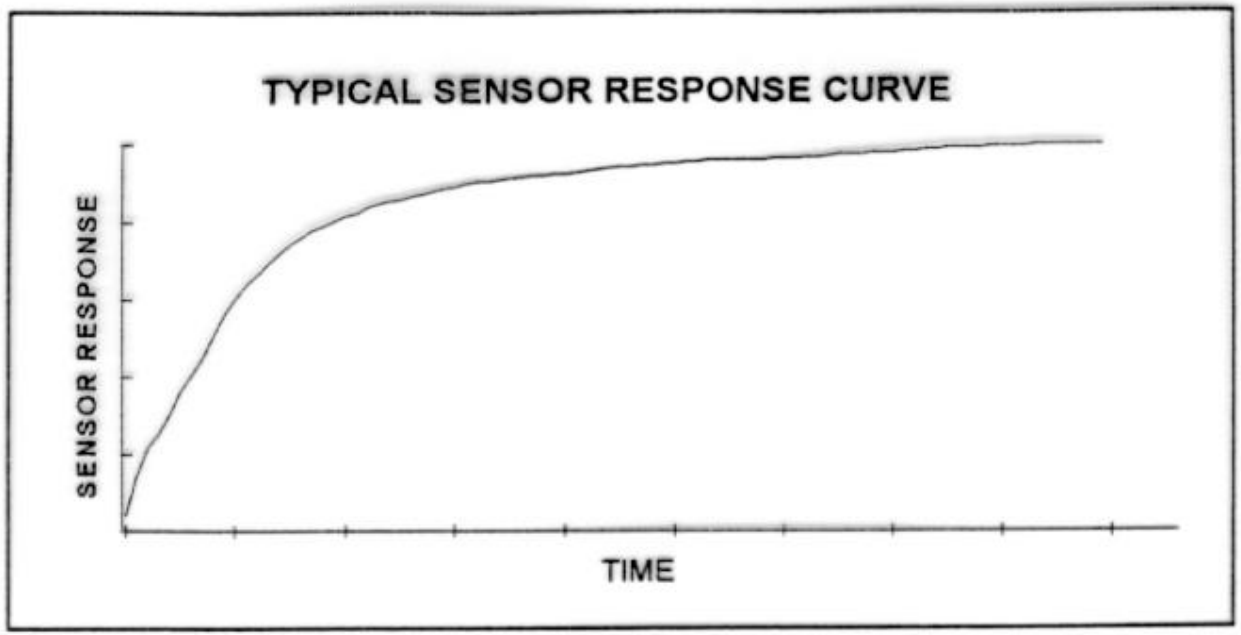

FIGURE 1

BM25 Electrochemical Sensor

Electrochemical Sensor

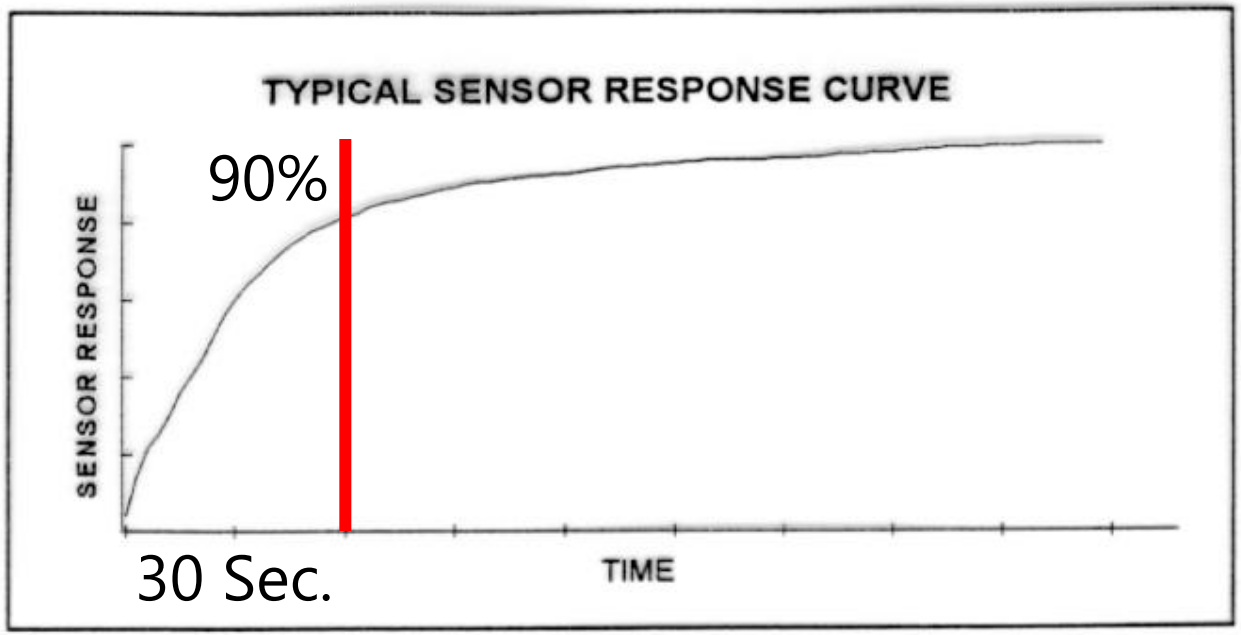

FIGURE 1

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Electrochemical Sensor

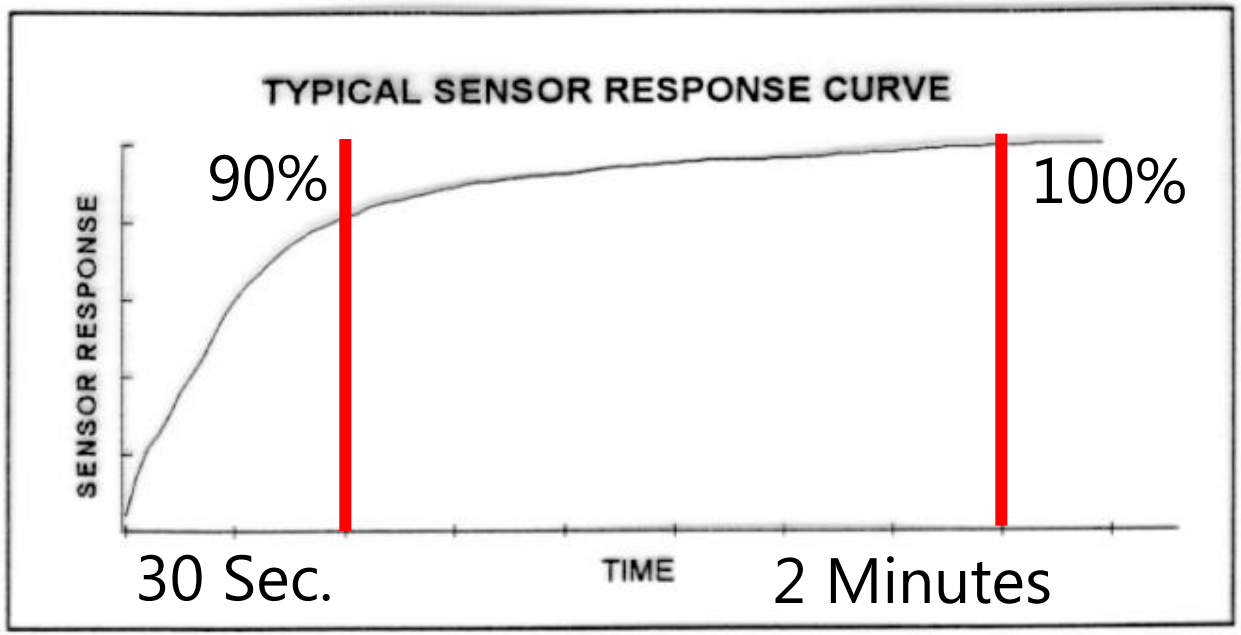

FIGURE 1

BM25 Electrochemical Sensor

Electrochemical Sensor

Oxygen
Carbon Monoxide
Hydrogen Sulfide
Hydrogen
Sulfur Dioxide
Nitrogen Dioxide
Chlorine Dioxide
Ethylene Oxide

Chlorine
Hydrogen Cyanide
Nitric Oxide
Ammonia
Hydrogen Chloride
Phosphine
Arsine
Silane

Infrared Sensor

This technology is used in the BM25 for the detection of Hydrocarbons in the range of 0-100% LEL or CO_2 in the range of 0-5% by volume.

Infrared Technology is preferably used in presence of catalytic sensor's poisons.

LEL IR sensors are not CSA certified

Infrared Sensor

How do Infrared Sensors work?

Based on the principle that all gases absorb light energy at a specific wavelength.

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Gas concentration is proportional to the amount of light energy absorbed.

Infrared Sensor

How do Infrared Sensors work?

Based on the principle that all gases absorb light energy at a specific wavelength.

Gas concentration is proportional to the amount of light energy absorbed.

The more light energy absorbed, the greater the concentration of gas.

BM25 PID Sensor

PID (PhotoIonization Detection) Sensor

This technology allows for the detection of Volatile Organic Compounds (VOCs).

PID sensors are not CSA certified

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BM25 PID Sensor

PID (PhotoIonization Detection) Sensor

This technology allows for the detection of Volatile Organic Compounds (VOCs).

VOCs – Any carbon based molecule that is in a gaseous form.

Examples: Benzene, Toluene, Xylene, Pentane, etc…

PID Sensor

PID (PhotoIonization Detection) Sensor

Why not use the catalytic diffusion (LEL) Sensor for detection of VOCs?

BM25 PID Sensor

PID (PhotoIonization Detection) Sensor

Why not use the catalytic diffusion (LEL) Sensor for detection of VOCs?

The catalytic diffusion sensor is great at detection of VOCs but only in the LEL range.

PID Sensor

PID (PhotoIonization Detection) Sensor

Why not use the catalytic diffusion (LEL) Sensor for detection of VOCs?

The catalytic diffusion sensor is great at detection of VOCs but only in the LEL range.

But many VOCs are toxic down in the ppm range.

BM25 PID Sensor

PID (PhotoIonization Detection) Sensor

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The catalytic diffusion sensor is great at detection of VOCs but only in the LEL range.

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Therefore to detect VOCs in the ppm range, the

PID sensor is the best sensor choice of detection.

PID Sensor

PID (PhotoIonization Detection) Sensor

Why not use the catalytic diffusion (LEL) Sensor for detection of VOCs?

The catalytic diffusion sensor is great at detection of VOCs but only in the LEL range.

But many VOCs are toxic down in the ppm range.

Therefore to detect VOCs in the ppm range, the

PID sensor is the best sensor choice of detection.

The PID sensor can read in ppms.

PID (PhotoIonization Detection) Sensor

How does a PID sensor work?

PID Sensor

PID (PhotoIonization Detection) Sensor

How does a PID sensor work?

A 10.6 eV (electron volt) lamp produces photon energy in the form of ultraviolet light that will ionize the gas causing it to take on a positive charge. Electrodes in the sensor will detect this ionization converting that to a reading on the display in ppm concentrations.

PID Sensor

PID (PhotoIonization Detection) Sensor

How does a PID sensor work?

A 10.6 eV (electron volt) lamp produces photon energy in the form of ultraviolet light that will ionize the gas causing it to take on a positive charge. Electrodes in the sensor will detect this ionization converting that to a reading on the display in 0.1 ppm concentrations.

Only gases with an Ionization Potential of 10.6 or less can be ionized.

Sensor Date Codes

Sensor Date Codes

Since sensors are consumables they do have a life expectancy that is best determined during calibration. A date code can be found on the sensors to help determine if the sensor is past or within warranty.

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First four numbers of the S/N show year and month of make (YYMM)

Sensor was made in March 2007

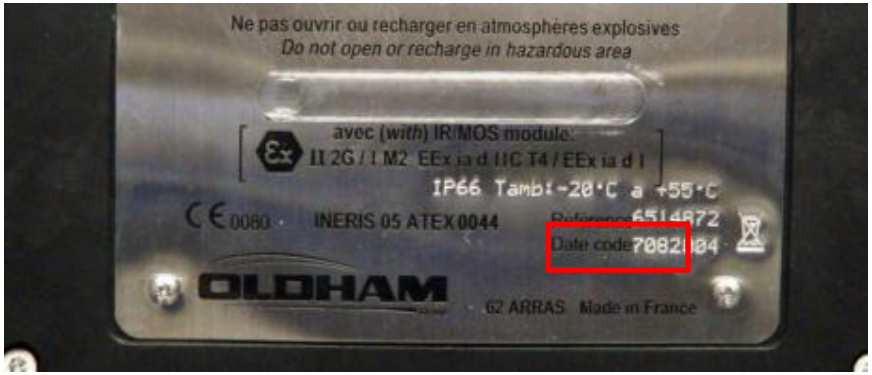
BM25 Date Codes

BM25 Date Code

The BM25 has a two year warranty and the manufacture's date code can be found on the back of the unit.

BM25 Date Codes

BM25 Date Code

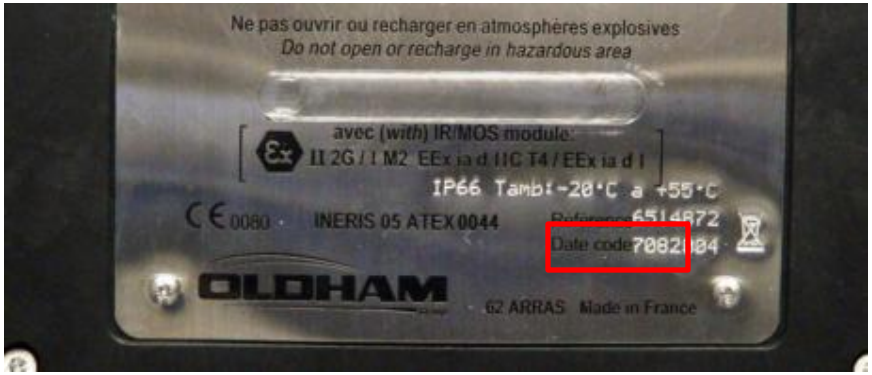


The BM25 has a one year warranty and the manufacture's date code can be found on the back of the unit.

First four numbers shows year and day of make (YDDD)

BM25 Date Codes

BM25 Date Code



The BM25 has a one year warranty and the manufacture's date code can be found on the back of the unit.

First four numbers shows year and day of make (YDDD)

BM25 was made in 2007 on the 82nd day.

Sensor Replacement

To remove and replace a sensor from the BM25, simply remove the four screws and remove the sensor cover. The sensors can be replaced by gently pulling out the old sensor and replacing with the new.

BM25 Sensor Replacement

OLDHAM

Thank You

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