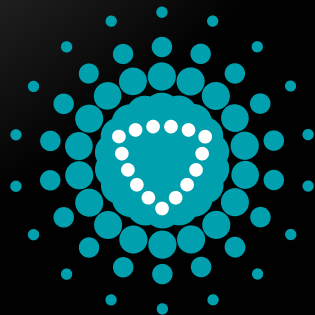


G-SHIELD FIRE



INSTRUCTION MANUAL



1 Introduction

The G-Shield Fire is a gas detection system that attaches to a vehicle. It has a touchscreen display, two Sensor Platforms, and two G-Pods. One G-Pod detects Hydrogen Cyanide (HCN) and the other detects Carbon Monoxide (CO).



Figure 1. G-Shield Fire shown with the touchscreen display mounted in the optional enclosure.

2 Method of Operation

The touchscreen display, Sensor Platforms, and G-Pods communicate by MODBUS RTU over RS-485. This design allows multiple G-Pods to communicate with a single touchscreen display. The G-Shield Fire is configured for two G-Pods.

3 For Your Safety



WARNING: You must obey the instructions for the safe installation, use, and maintenance of this equipment.

Note: Modification of this equipment is strictly prohibited without written permission from Gastech Australia Pty Ltd.

4 Further Information

Please tell us if you want help with this equipment.

Head Office: Gastech, 24 Baretta Road, Wangara, WA 6065, Australia.

Phone: +61 8 6108 0000 Email: info@gastech.com Website: gastech.com

Table of Contents

1	Introduction	2
2	Method of Operation	2
3	For Your Safety	2
4	Further Information	2
5	List of Figures	5
6	Keywords and Symbols Used in This Manual	6
7	Intended use	6
8	Safety Precautions	7
9	What is in the Box?	7
9.1	Touchscreen Display	7
9.2	Sensor Platform	8
9.3	G-Pod	8
10	Installation Information	9
10.1	Touchscreen display Installation	9
10.2	Sensor Platform Installation	10
10.3	G-Pod Installation	11
11	Electrical Installation	12
11.1	Touchscreen Power Inputs	12
11.2	Sensor Platform Connections	13
11.3	Sensor Platform Termination Resistor	13
11.4	Relay Connections	13
11.5	Wiring Diagram	14
11.6	Cable Information	14
12	Touchscreen Operation	15
12.1	Touchscreen Power On	16
12.2	Information	18
12.3	Settings	18
12.4	Incorrect PIN	19
12.5	Change PIN	19
12.6	Test Relays	21
12.7	Gas Alarms - Alarm Levels	22
12.8	Gas Alarms - No Active Alarms	22
12.9	Gas Alarms - Warning Alarm Active	22
12.10	Gas Alarms - Danger Alarm Active	23
12.11	Gas Alarms - Mutable Alarms	23
13	Calibration	24
13.1	Calibration Reminder	24
13.2	Response Test	25
13.3	HCN G-Pod Response Test	26
13.4	CO G-Pod Response Test	27
13.5	HCN G-Pod Zero Calibration	28
13.6	HCN G-Pod Span Calibration	29
13.7	CO G-Pod Zero Calibration	30
13.8	CO G-Pod Span Calibration	31
13.9	Cancel Calibration	32
13.10	Calibration Due	32



- 14 Error Messages 33
 - 14.1 Communications Error 33
- 15 Specifications 34
 - 15.1 Electrical 34
 - 15.2 Construction 34
 - 15.3 Environmental 34
 - 15.4 G-Pod Dimensions 35
 - 15.5 Sensor Platform Dimensions 35
 - 15.6 Touchscreen Dimensions 36
 - 15.7 Touchscreen Enclosure Dimensions 37
- 16 Spare Parts List 38
- 17 Maintenance 41
 - 17.1 Clean the Splash Guard 41
 - 17.2 Dummy Plug 41
- 18 Gastech Policy Statements 42

5 List of Figures

Figure 1.	G-Shield Fire shown with the touchscreen display mounted in the optional enclosure.	2
Figure 2.	Keywords and symbols used in this manual.	6
Figure 3.	The G-Shield Fire touchscreen display.	7
Figure 4.	The G-Shield Fire touchscreen fitted to its optional enclosure.	7
Figure 5.	Sensor Platform with G-Pod fitted.	8
Figure 6.	The G-Pod has electrical connections and an alignment key.	8
Figure 7.	G-Shield touchscreen dashboard cutout.	9
Figure 8.	G-Shield Fire Touchscreen enclosure VESA 75 mounts.	9
Figure 9.	Sensor platform exploded view.	10
Figure 10.	Splash Guard.	10
Figure 11.	G-Pod key and Sensor Platform keyway.	11
Figure 12.	Bushing Nut with Grub screw.	11
Figure 13.	Touchscreen electrical connections.	12
Figure 14.	Input power connection details.	12
Figure 15.	Sensor Platform connection details.	13
Figure 16.	SW1 set to the ON position on Sensor Platform 2.	13
Figure 17.	Relay 1 connection details.	13
Figure 18.	Relay 2 connection details.	13
Figure 19.	G-Shield Fire system wiring diagram.	14
Figure 20.	Touchscreen icons.	15
Figure 21.	Touchscreen user interface.	15
Figure 22.	Touchscreen Power on.	16
Figure 23.	Touchscreen Power on after power interruption.	17
Figure 24.	Alarm levels.	22
Figure 25.	Home screen - no gas detected.	22
Figure 26.	HCN Warning Alarm On.	22
Figure 27.	CO Warning Alarm On.	22
Figure 28.	HCN Danger Alarm On.	23
Figure 30.	Push to mute Danger Alarm.	23
Figure 29.	CO Danger Alarm On	23
Figure 31.	CO Danger Alarm muted.	23
Figure 32.	Calibration equipment.	24
Figure 33.	Calibration reminder.	24
Figure 34.	Calibrate now.	24
Figure 35.	Response test gas requirements and pass criteria.	25
Figure 36.	HCN response test too high.	26
Figure 37.	HCN response test too low.	26
Figure 38.	CO response test too high.	27
Figure 39.	CO response test too low.	27
Figure 40.	Sensor calibration due.	32
Figure 41.	Error messages.	33
Figure 42.	Sensor communication error.	33
Figure 43.	Electrical Specifications	34
Figure 44.	Construction Specifications.	34
Figure 45.	Environmental Specifications.	34
Figure 46.	G-Pod dimensions.	35
Figure 47.	Sensor Platform dimensions.	35
Figure 48.	Touchscreen dimensions.	36
Figure 49.	Touchscreen enclosure dimensions.	37
Figure 50.	List of spare parts.	38
Figure 51.	Touchscreen enclosure assembly.	40
Figure 52.	Sensor Platform assembly.	40
Figure 53.	Dummy Plug fitted to Sensor Platform.	41

6 Keywords and Symbols Used in This Manual






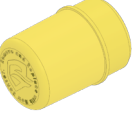

Symbol	Keyword	Description
	Warning	WARNING: Do not (warning text). Can cause injury or death to personnel.
No Symbol	Caution	CAUTION: Do not (caution text). Can cause damage to parts or equipment.
	Touchscreen	Touchscreen display (Shown with optional stainless steel enclosure).
	Sensor Platform	Sensor Platform with Splash Guard attached.
	G-Pod	G-Pod sensor module.
	Splash Guard	The Splash Guard gives protection to the G-Pod from changes in environmental conditions.
	Dummy Plug	The Dummy Plug gives protection to the Sensor Platform when a G-Pod is not fitted.
	MODBUS	MODBUS® is a data communications protocol developed by Modicon now Schneider Electric.

Figure 2. Keywords and symbols used in this manual.

7 Intended use

The G-Shield Fire detects HCN and CO outside the vehicle and shows the results on the touchscreen display.



WARNING: The G-Shield Fire detects HCN and CO. These gases can cause injury or death to personnel.



WARNING: The G-Shield Fire is not a personal gas detector. If you do not use a personal gas detector this can cause injury or death to personnel.



WARNING: Do not use the G-Shield Fire in an explosive or oxygen rich atmosphere. An explosion can cause injury or death to personnel.

8 Safety Precautions



Read all safety warnings before you install or operate this equipment.

9 What is in the Box?

9.1 Touchscreen Display

The touchscreen display has connections for power, communications, and external alarms. An RS-485 data port connects the touchscreen display to the Sensor Platforms. Refer to [section 11, Electrical Installation](#).

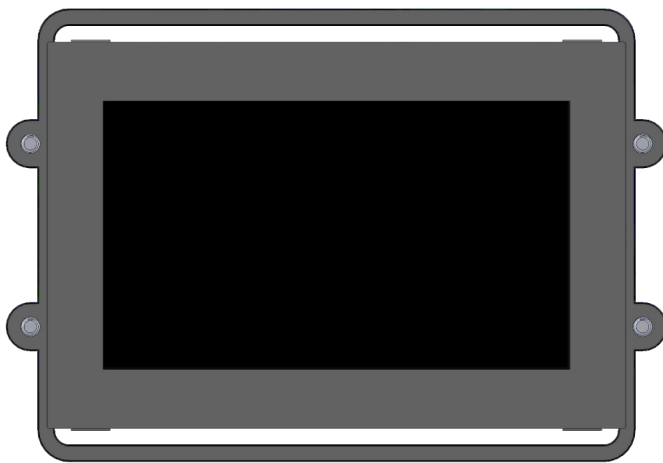


Figure 3. The G-Shield Fire touchscreen display.

The G-Shield Fire is available with an enclosure. Use the enclosure when it is not possible to install the touchscreen directly into the dashboard. The enclosure is compliant with the VESA 75 requirements.



Figure 4. The G-Shield Fire touchscreen fitted to its optional enclosure.

9.2 Sensor Platform

The Sensor Platform supplies the electrical connections for the G-Pods. The Sensor Platform uses RS-485 and MODBUS RTU.



Figure 5. Sensor Platform with G-Pod fitted.

9.3 G-Pod

The G-Pod is a smart, hot-swappable gas detector that contains calibration information and sensor data.

Calibrate the G-Pod in the workshop or maintenance section for fast deployment.

The G-Shield Fire is supplied with one HCN G-Pod, and one CO G-Pod.



Figure 6. The G-Pod has electrical connections and an alignment key.

10 Installation Information



WARNING: The G-Shield Fire must be installed by an approved person. Incorrect installation can cause injury or death to personnel.

10.1 Touchscreen display Installation

Install the touchscreen display into the vehicle cab. You can install it directly into the dashboard or use the optional stainless steel enclosure. The enclosure has an industry standard VESA 75 attachment on its rear cover.

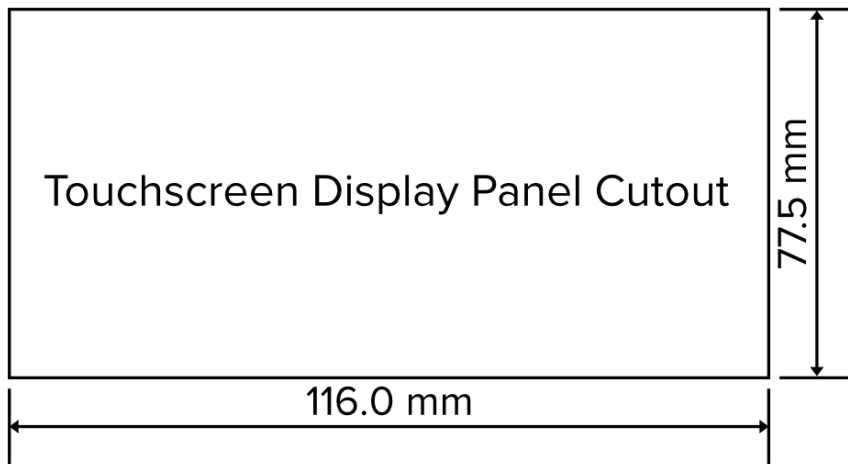


Figure 7. G-Shield touchscreen dashboard cutout.

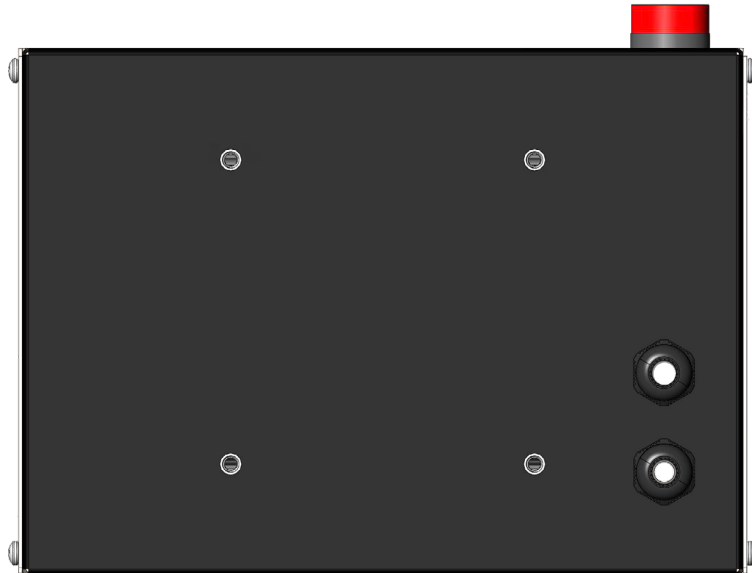


Figure 8. G-Shield Fire Touchscreen enclosure VESA 75 mounts.



WARNING: The touchscreen can distract the driver and cause an accident. An accident can cause injury or death to personnel.

10.2 Sensor Platform Installation

Install the Sensor Platforms vertically at the rear of the vehicle. Make sure the G-Pod sinter faces the ground. Use the M25 x 1.5P thread to attach the Sensor Platform to the vehicle. Torque the Mounting Nut to between 12 Nm and 20 Nm. Gastech recommends finger tight and 3/4 of one turn. You can use Loctite® 243™ Threadlocker to make sure the nut does not loosen because of vibration.

CAUTION: Do not exceed 20 Nm when the Mounting Nut is tightened. Damage can be caused to the gasket.

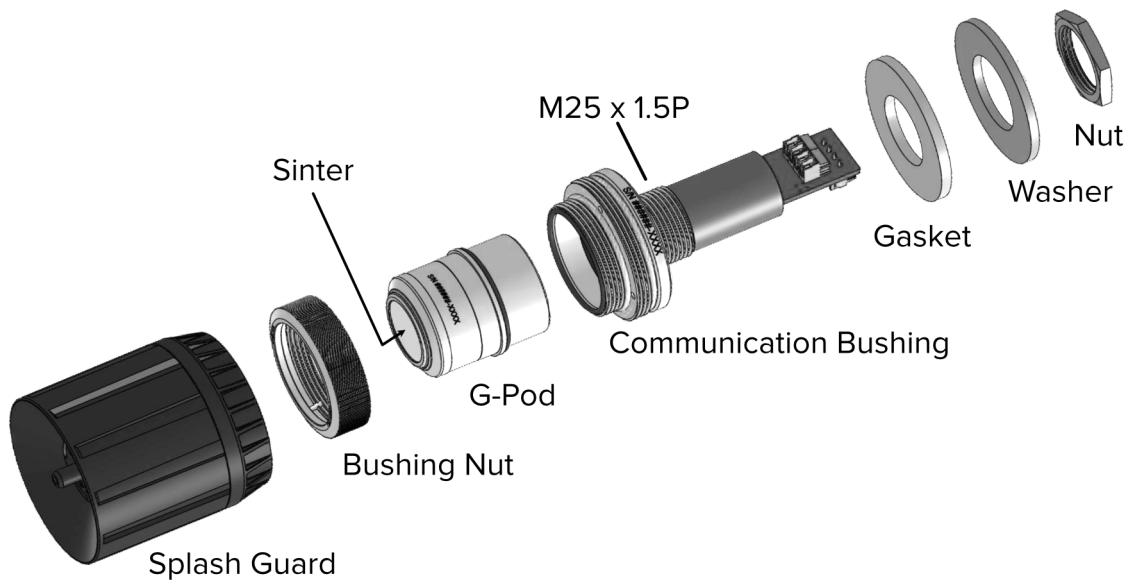


Figure 9. Sensor platform exploded view.

CAUTION: The G-Pod sinter must face towards the ground. Sudden pressure changes can cause a loss of accuracy.

Replace the G-Pod with a Dummy Plug (P/N 65-2000-00) during maintenance. [Refer to section 17.2.](#)

CAUTION: Do not try to attach the Splash Guard when a Dummy Plug is installed as it will not fit.

Make sure a Splash Guard is used when a G-Pod is attached to the Sensor Platform. The Splash Guard provides protection to the G-Pod from wind and water.

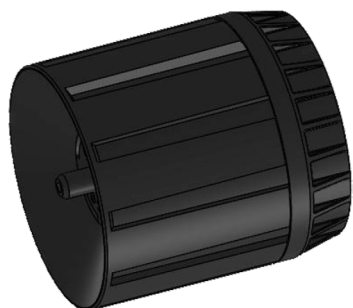


Figure 10. Splash Guard.

10.3 G-Pod Installation

Align the key on the G-Pod with the keyway on the Sensor Platform. Push the G-Pod into the Sensor Platform.

NOTE: You will notice some resistance as air is expelled from between the G-Pod and the Sensor Platform. This is normal.



Figure 11. G-Pod key and Sensor Platform keyway.

The Bushing Nut attaches the G-Pod to the Sensor Platform. Hold the Bushing Nut in position with the grub screw. Tighten the grub screw with the supplied 1.3 mm hex wrench. Do not use thread lock.

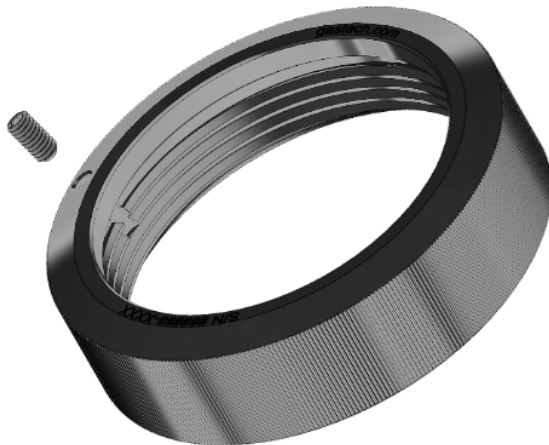


Figure 12. Bushing Nut with Grub screw.

CAUTION: Do not over tighten the grub screw. The grub screw can damage the threads on the Sensor Platform.

CAUTION: Sensor Platforms are supplied without a G-Pod installed. Make sure you install a G-Pod.

11 Electrical Installation

Connect the G-Shield Fire to a DC supply voltage of 9 to 30V. The G-Shield Fire can be installed into vehicles with a 12V DC or 24V DC electrical system.



WARNING: The G-Shield Fire must be installed by an approved person. Incorrect installation can cause injury or death to personnel.

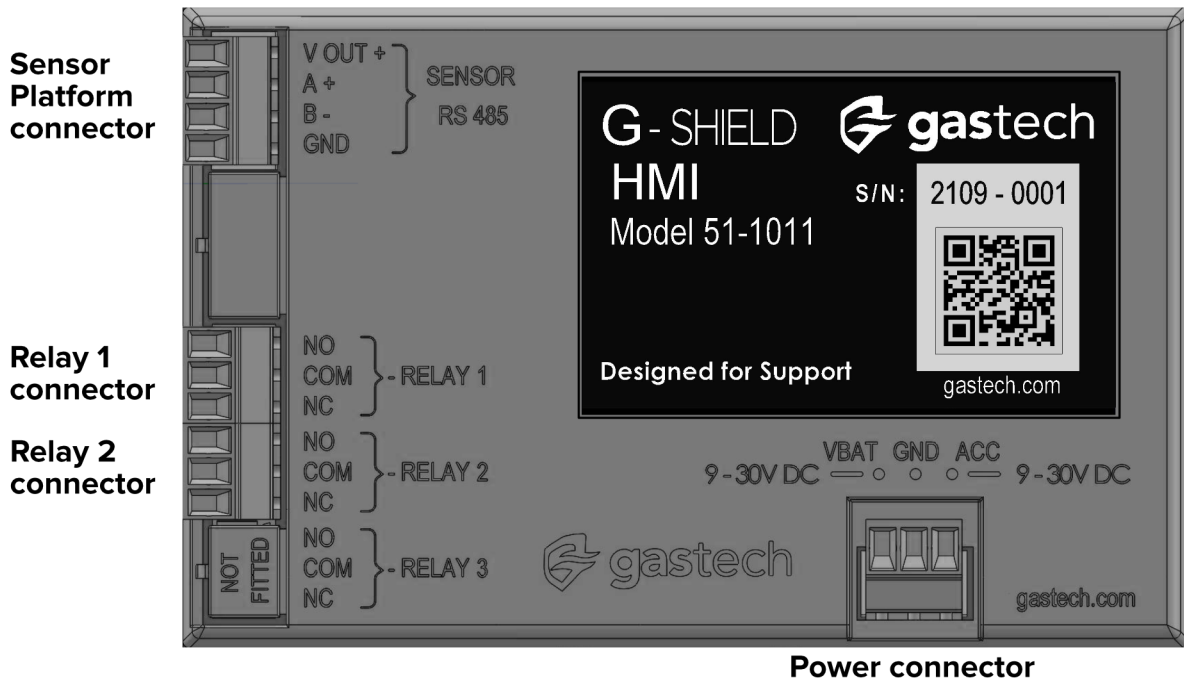


Figure 13. Touchscreen electrical connections.

11.1 Touchscreen Power Inputs

The touchscreen has 2 inputs for power.

VBAT supplies constant power to the Sensor Platforms. VBAT connects internally to VOUT+ on the sensor RS-485 connection. Constant power is necessary for the G-Pods. Connect the vehicle battery input to VBAT.

ACC supplies power to the touchscreen. Connect the vehicle accessories circuit to ACC. The touchscreen will turn on and off with the vehicle ignition.

Label	Connection Description	Rating
VBAT	Positive supply from vehicle battery	9 - 30 VDC
GND	GND connection	
ACC	Positive supply from vehicle accessories circuit	9 - 30 VDC

Figure 14. Input power connection details.

11.2 Sensor Platform Connections

Label	Connection Description
VOUT+	Positive supply voltage to Sensor Platform
A+	Signal A
B-	Signal B
GND	GND supply voltage to Sensor Platform

Figure 15. Sensor Platform connection details.

11.3 Sensor Platform Termination Resistor

RS-485 is a balanced transmission standard. The end of the electrical transmission line must have a termination resistor. Set the switch SW1 to the ON position to use the built-in termination resistor for Sensor Platform 2.

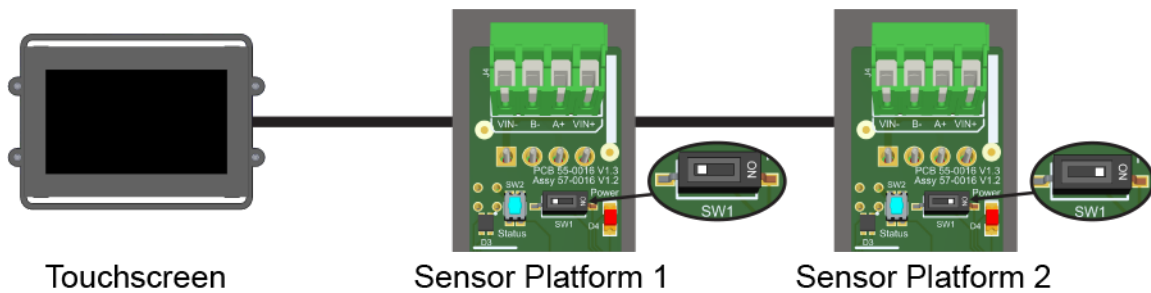


Figure 16. SW1 set to the ON position on Sensor Platform 2.

11.4 Relay Connections

The touchscreen has 2 relay outputs to connect external equipment. The relays are activated when the gas detected reaches the danger alarm level. See [section 12.6 Test Relays](#).

Label	Connection description
NO	Normally open relay contact
COM	Common relay contact
NC	Normally closed relay contact

Figure 17. Relay 1 connection details.

Label	Connector description
NO	Normally open relay contact
COM	Common relay contact
NC	Normally closed relay contact

Figure 18. Relay 2 connection details.

11.5 Wiring Diagram

The G-Shield Fire has two Sensor Platforms. Use a suitable cable to connect the touchscreen to the first Sensor Platform and use the same specification cable to connect to the second Sensor Platform. Refer to [section 11.6 Cable Information](#).

Gastech recommends inline fuses for both power feeds. Refer to figure 19 for the fuse values.

NOTE: The vehicle may already have adequate fuse protection.

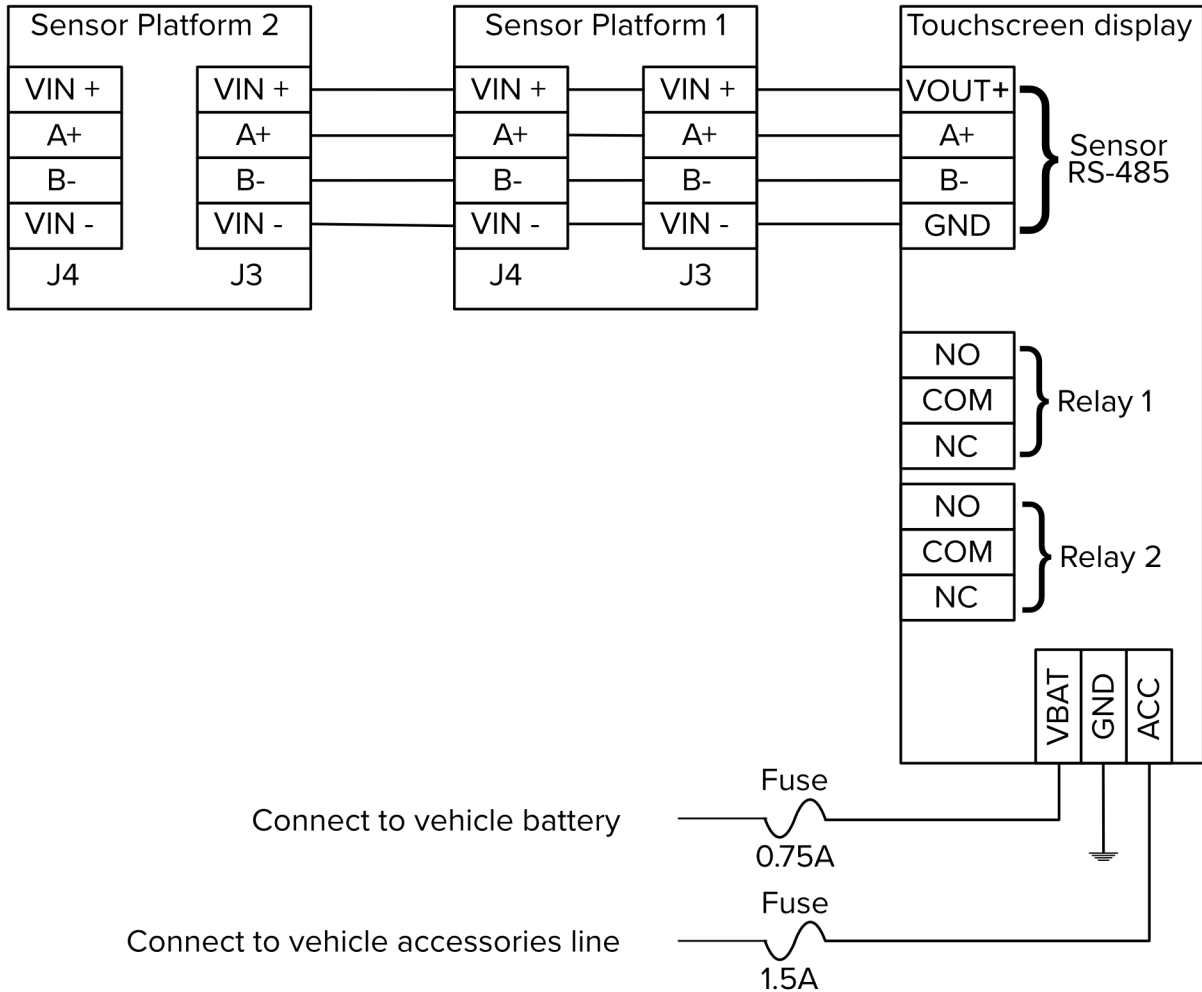


Figure 19. G-Shield Fire system wiring diagram.

11.6 Cable Information

Use four core sheathed cable between the touchscreen and the Sensor Platforms. The maximum cable length permitted is 20 m.

Use stranded tinned copper conductors in a PVC jacket. Cable size of 16 AWG to 22 AWG is suitable. The maximum allowable outside diameter (OD) is 6.5 mm. Use insulated bootlace ferrules to avoid damage to the copper conductors.

NOTE: You can use equivalent alternatives for this item.

12 Touchscreen Operation

The capacitive touchscreen controls the G-Shield. It shows gas level, Sensor Platform status, and alarm indication. The touchscreen uses custom icons and text to give information to the user.

Icon	Description	Icon	Description
	Back button		Enter button
	Home button		Information button
	Save button		Settings button
	Undo button		

Figure 20. Touchscreen icons.

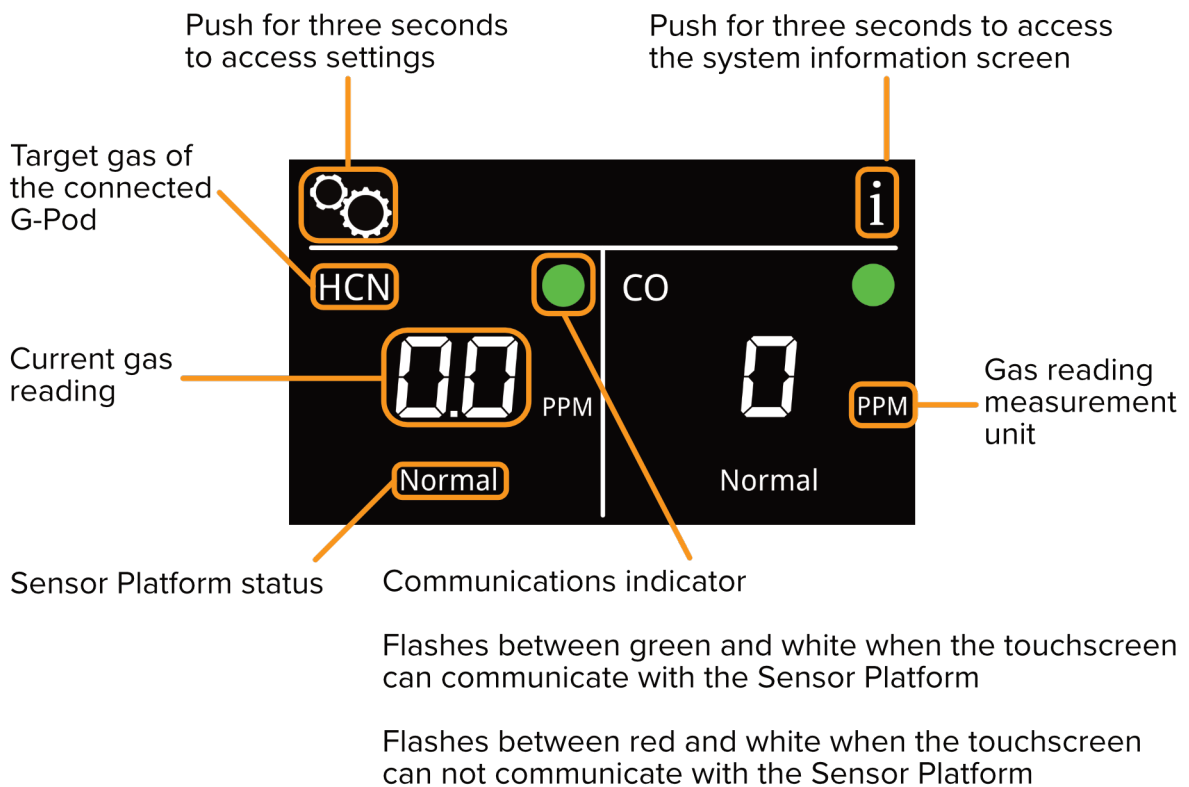


Figure 21. Touchscreen user interface.

12.1 Touchscreen Power On

The vehicles accessory circuit provides power to the touchscreen. When the vehicles ignition is switched to ACC the touchscreen will turn on.

NOTE: Constant power is supplied to the Sensor Platforms through the VBAT connection on the touchscreen.

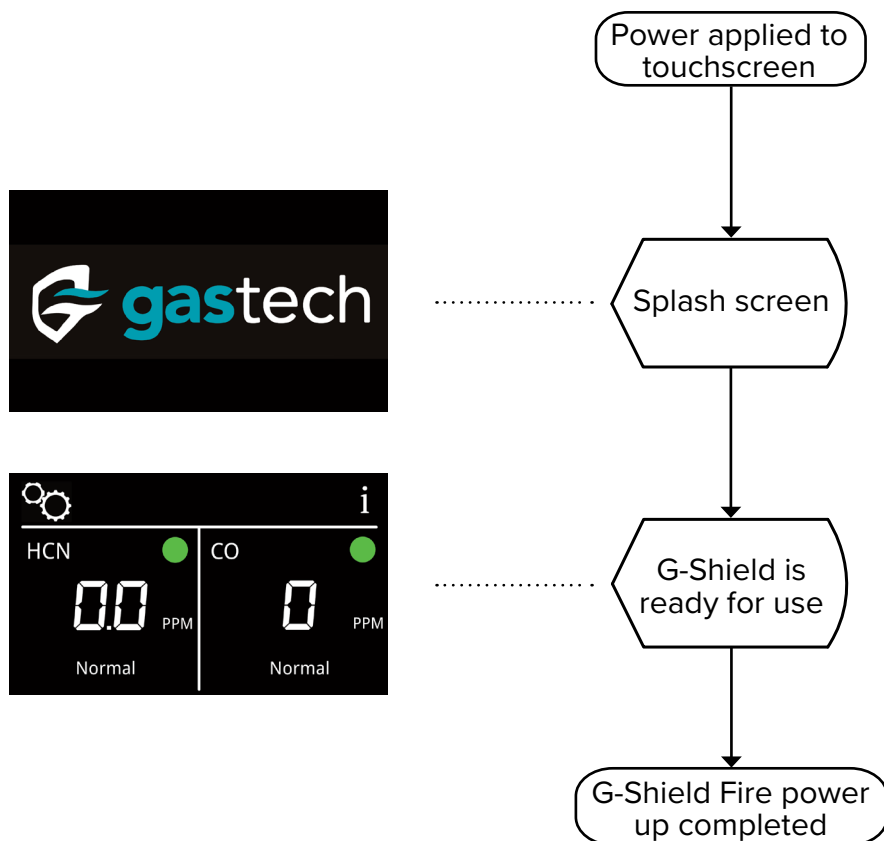


Figure 22. Touchscreen Power on.

NOTE: The G-Shield Fire is ready for use within one minute.

Power interruptions to the G-Pods require an additional warm up period. Interruptions can be caused by routine maintenance to the vehicles electrical system or from failure of the electrical system.

G-Pod power interruptions occur when VBAT is disconnected or when a G-Pod is replaced.

The G-Shield Fire follows an extended power up sequence when power is first applied to the G-Pods.

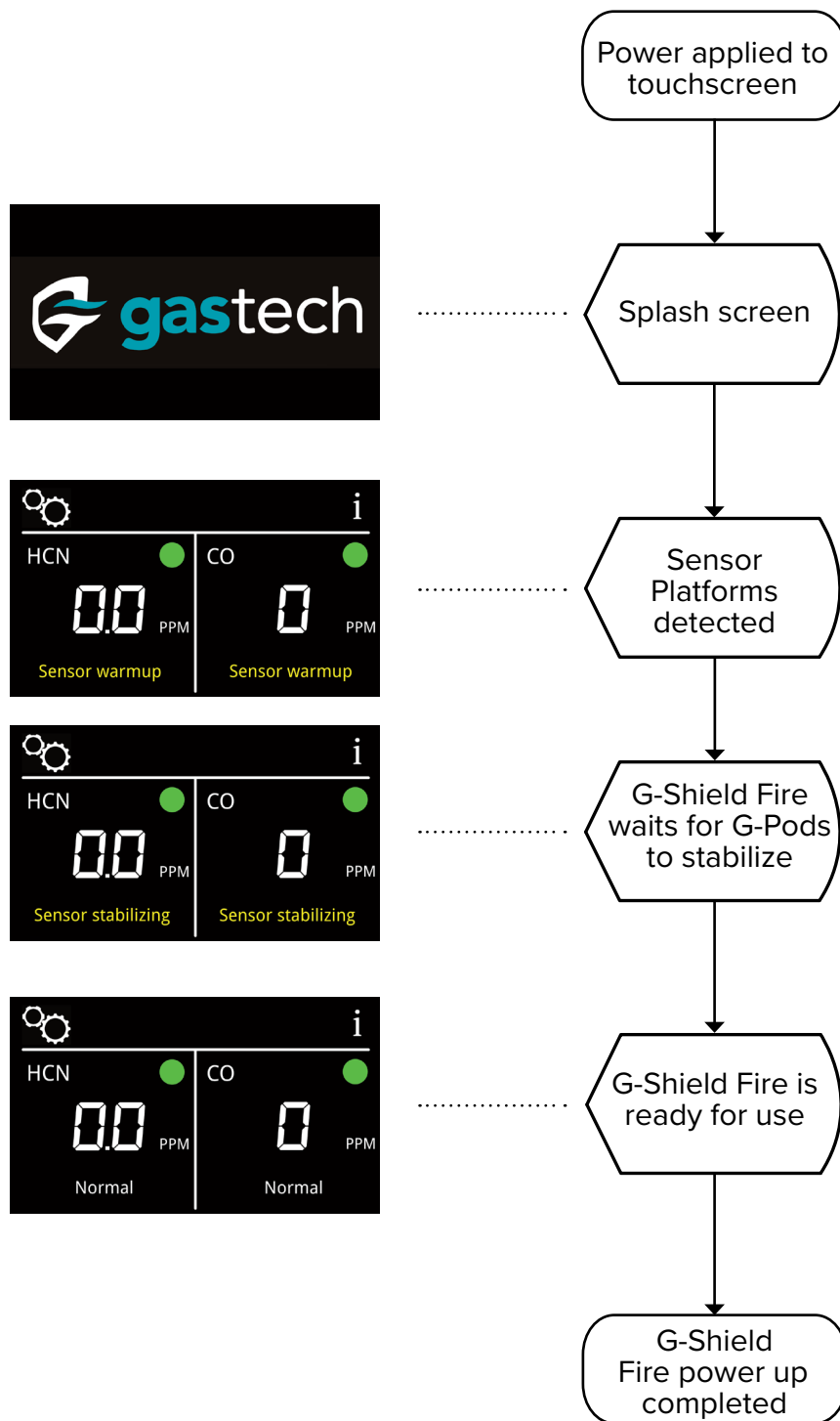
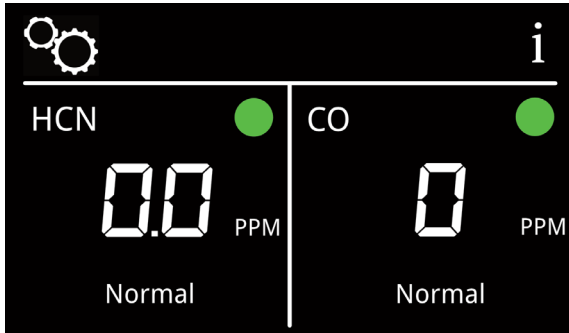


Figure 23. Touchscreen Power on after power interruption.

The G-Shield Fire is prepared for use when the G-Pods complete their five minute warm-up.

12.2 Information

The touchscreen home screen provides access to important system information.



Step 1. Push  for three seconds.

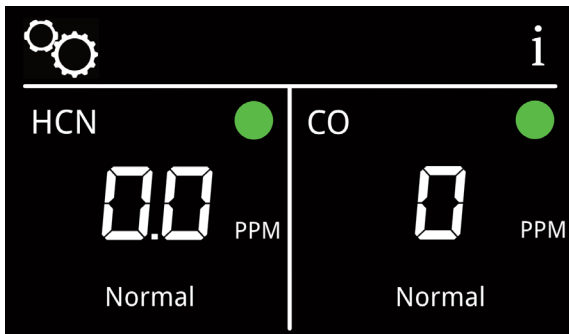


Step 2. Push  to return to the home screen.

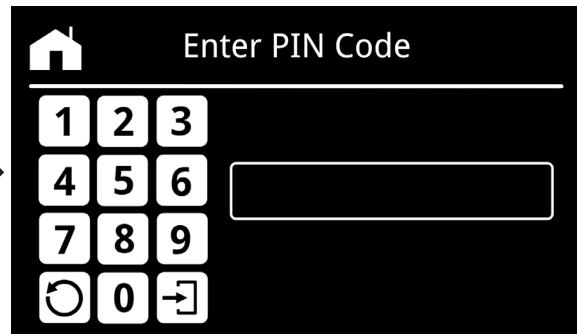
The information screen shows details of the installed sensors, the touchscreen firmware version, and the telephone number for tech support.

12.3 Settings

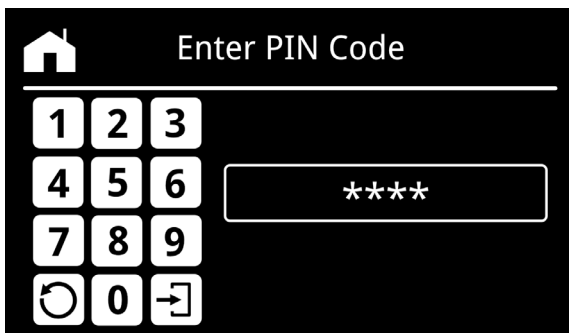
The settings menu is protected by a Personal Identification Number (PIN) code and is accessed from the home screen.



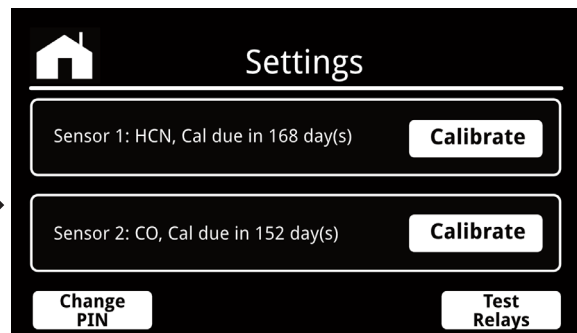
Step 1. Push  for three seconds.



Step 2. Default PIN code is four zeros.



Step 3. Type in the PIN code. Push 



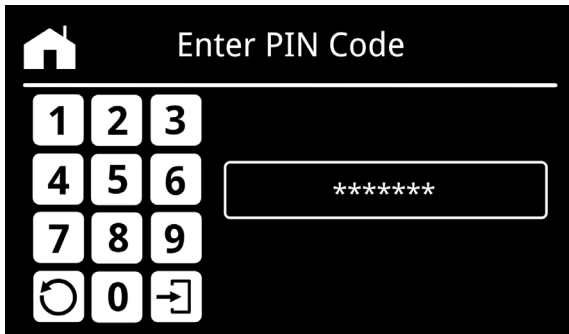
Step 4. Push  to return to the home screen.

NOTE: PIN codes can be four to six digits long. Each character is masked for security purposes.

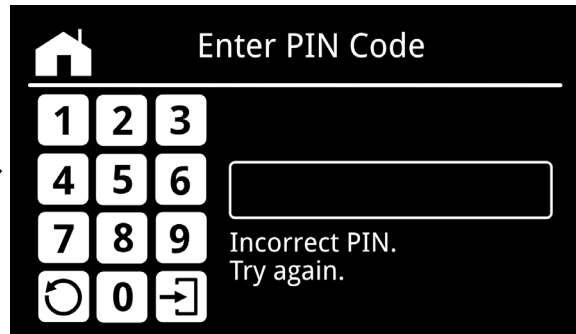
If the PIN code is not recognized please refer to section [12.4 Incorrect PIN](#).

12.4 Incorrect PIN

The user has typed an incorrect PIN code. This example shows seven digits have been entered. PIN codes must be four to six digits in length.



Step 1. Push  to continue



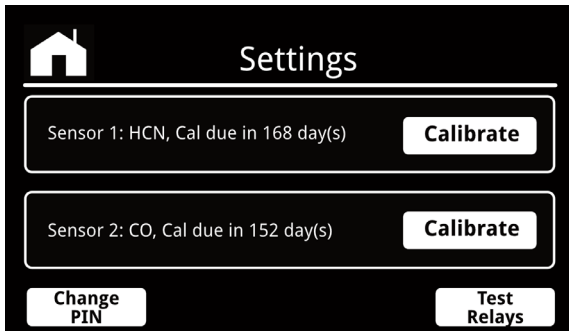
Step 2. Type in PIN again.

The touchscreen gives instant feedback if an incorrect PIN is entered. The input field is automatically cleared and a message is displayed.

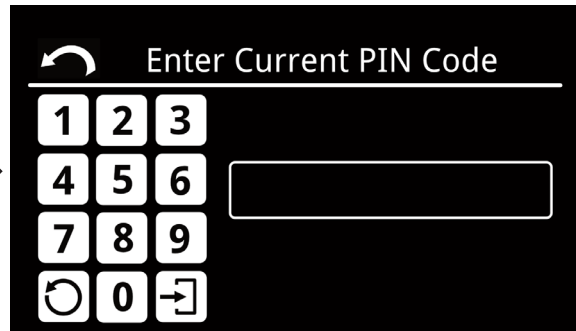
NOTE: There is no limit to the amount of times an incorrect PIN can be entered.

[Contact Gastech](#) if you have forgotten the PIN code.

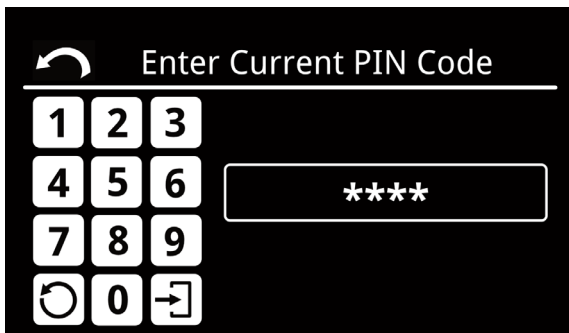
12.5 Change PIN



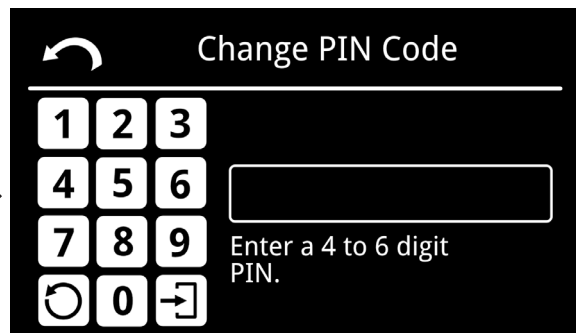
Step 1. Push  to continue



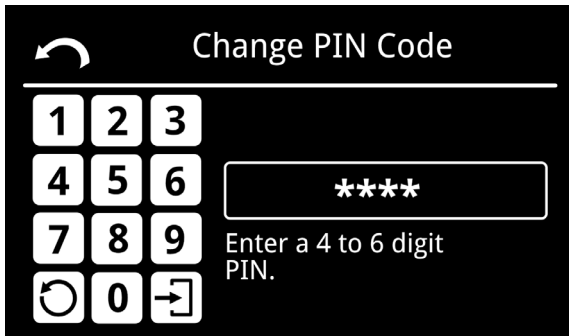
Step 2. Type in the current PIN code.



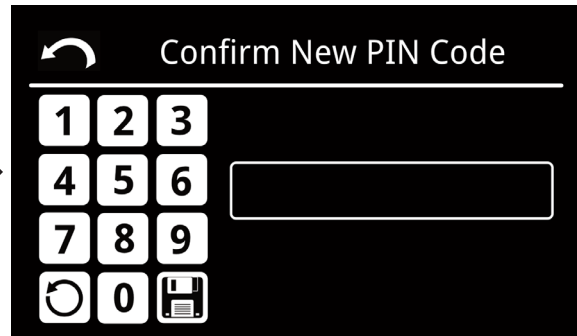
Step 3. Push  to continue.



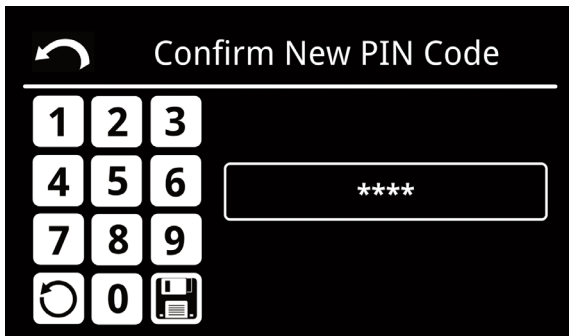
Step 4. Type in a new PIN code.



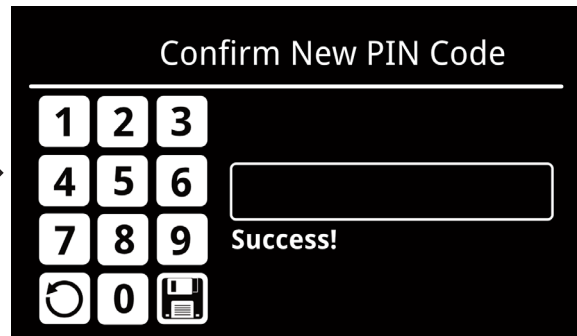
Step 5. Push to continue.



Step 6. Type in the same new PIN code.

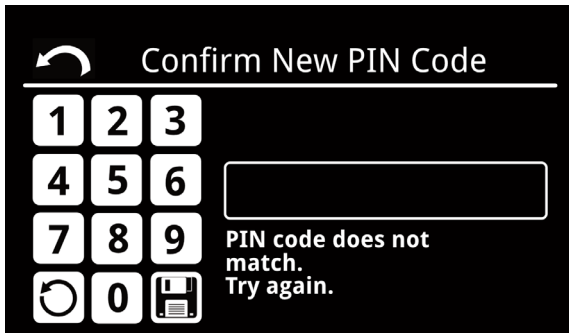


Step 7. Push to continue.



Step 8. The PIN code has been changed.

If the PIN codes do not match, the touchscreen will display this screen.



Step 9. Type in the same new PIN code.

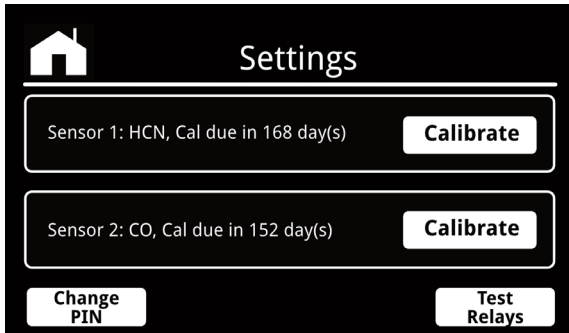
NOTE: There are no limits to the number of times you can attempt to key in the new PIN code.

If you cannot recall the new PIN code chosen, then push to start the change PIN code operation again.

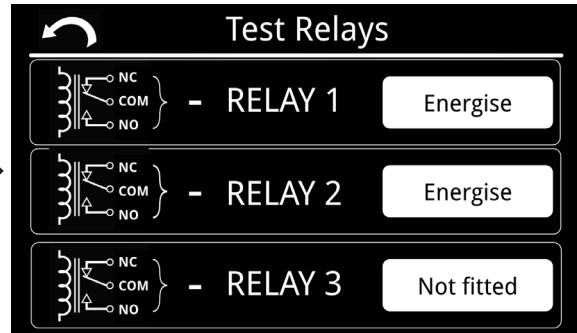
To stop the PIN code change, push until the Settings screen is shown. Push to return to the home screen.

12.6 Test Relays

Access the settings screen. [See section 12.3.](#)

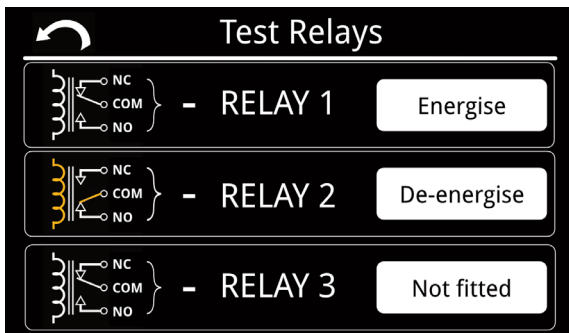


Step 1. Push **Test Relays** to continue.



Step 2. Push **Energise** for Relay 2 to test it.

The energise button toggles the relay between its two states.



Step 3. Push **De-energise** to turn Relay 2 off.

NOTE: The G-Shield Fire has two relays. Relay 1 is tested in the same way as Relay 2.

12.7 Gas Alarms - Alarm Levels

G-Pod alarm levels are factory set and are not adjustable.

G-Pod	Warning Alarm		Danger Alarm	
	Activation	Deactivation	Activation	Deactivation
HCN	4.7 PPM	4.0 PPM	10 PPM	9.0 PPM
CO	30 PPM	27 PPM	200 PPM	180 PPM

Figure 24. Alarm levels.

Alarm hysteresis prevents the reactivation of an alarm until the gas level has fallen to a factory set level.

12.8 Gas Alarms - No Active Alarms

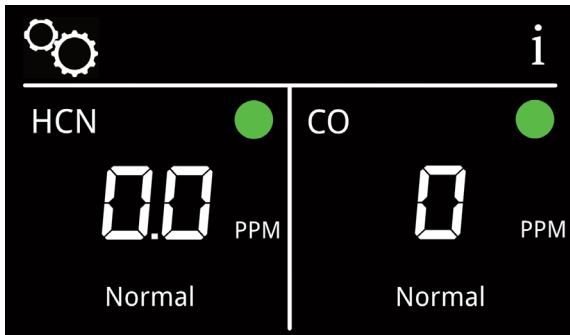


Figure 25. Home screen - no gas detected.

Readings: Detected gas level below alarm limits.
Relay State: Relay 1 not active. Relay 2 not active.

12.9 Gas Alarms - Warning Alarm Active

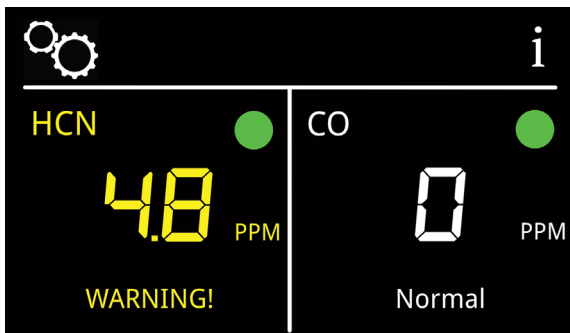


Figure 26. HCN Warning Alarm On.

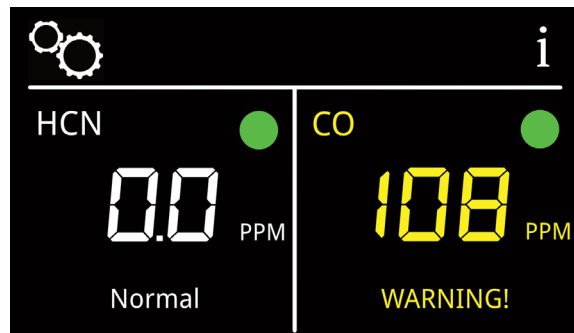


Figure 27. CO Warning Alarm On.

Readings: Detected gas level above the WARNING! alarm limit.
Relay State: Relay 1 not active. Relay 2 not active.

12.10 Gas Alarms - Danger Alarm Active

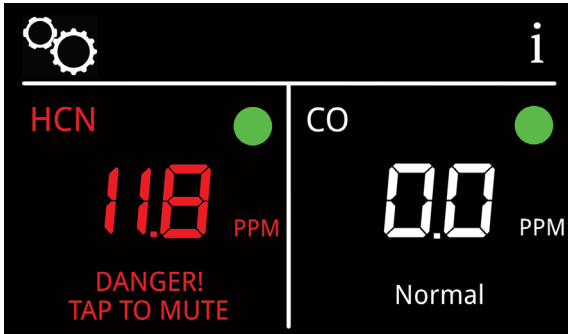


Figure 28. HCN Danger Alarm On.

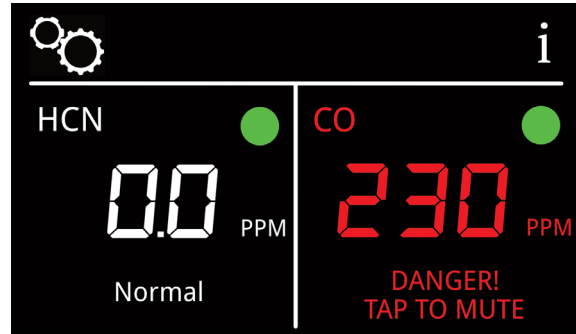


Figure 29. CO Danger Alarm On

Readings: Detected gas level above the DANGER! alarm limit.
Relay State: Relay 1 active. Relay 2 active.

12.11 Gas Alarms - Mutable Alarms

The touchscreen has two relay outputs to connect external equipment.

Both relays operate when the detected gas level is equal to or greater than the danger alarm limit.

The touchscreen tells the user that the alarm can be muted. Push anywhere on the touchscreen to mute the danger alarm. This action de-energises Relay 1. Relay 2 remains energised.

The danger alarm remains muted for fifteen minutes unless the detected gas level falls below the danger alarm deactivation level. Refer to [section 12.7 Alarm Levels](#)

NOTE: If the detected gas level remains above the danger alarm level after fifteen minutes Relay 1 re-energises.

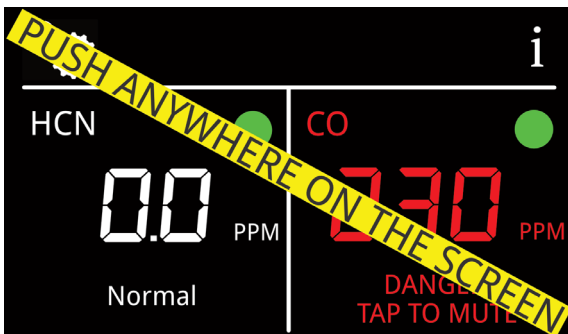


Figure 30. Push to mute Danger Alarm.

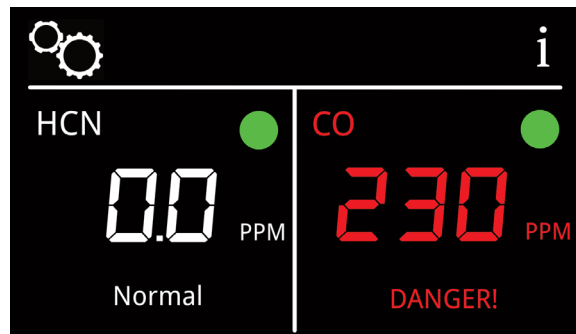


Figure 31. CO Danger Alarm muted.

13 Calibration

G-Pods are factory calibrated before dispatch to allow for fast deployment in the field. Calibration must occur at least every six months. G-Pod calibration gas concentrations are factory set and cannot be adjusted.

G-Pod calibration adjusts the response of the G-Pod to known concentrations of gas at two points, zero and span.

Zero calibration uses zero-grade air or fresh air. Span calibration uses a known concentration of calibration gas.

Calibrate G-Pods with the correct concentration of calibration gas.

Refer to [Section 13.4 HCN Calibration](#) and [Section 13.6 CO Calibration](#) for the calibration procedure.

Description	Specification
HCN Calibration Gas	10 PPM
CO Calibration Gas	100 PPM
Zero Grade Air	< 0.1PPM Hydrocarbons
Tygon Flexible Tubing	3/16" ID, 5/16" OD (3.2 mm ID, 4.7 mm OD)
Fixed Flow Regulator	1.0 L/min

Figure 32. Calibration equipment.

13.1 Calibration Reminder

The touchscreen displays a calibration reminder when the G-Pod calibration is due within the next 14 days.

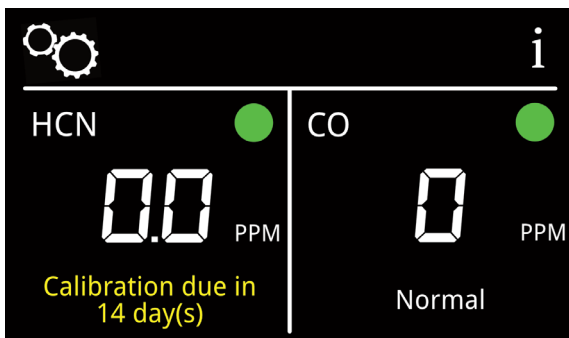


Figure 33. Calibration reminder.

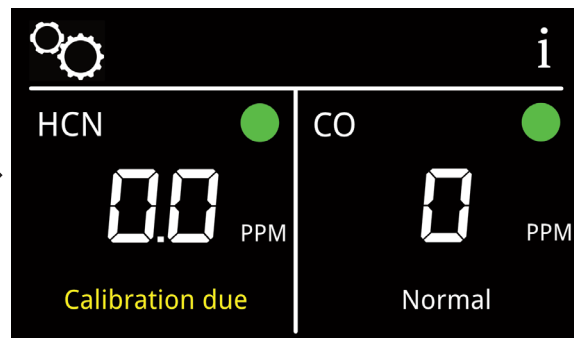


Figure 34. Calibrate now.



WARNING! G-Pod calibration is due. You must calibrate the G-Pod. Incorrect calibration can result in injury or death to personnel.

13.2 Response Test

G-Pods must be response tested when the G-Shield Fire is first commissioned and as necessary during use.

Gas is applied to the G-Pod for a fixed time and the response of the G-Pod must be within $\pm 10\%$ of the applied gas concentration. Gas flow rate must be $\geq 1\text{L}/\text{min}$.

Calibrate the G-Pod if its results do not agree with this specification.

G-Pod Type	Gas Concentration	Time to Apply Gas	Readings must be within this range
HCN	HCN 10 PPM	3 minutes	9.0 PPM to 11.0 PPM
CO	CO 100 PPM	1 minute	90 PPM to 110 PPM

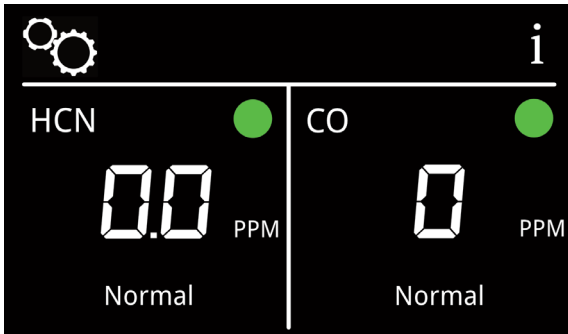
Figure 35. Response test gas requirements and pass criteria.

Make sure the Splash Guard is used at all times. You must use it when the G-Pod is calibrated or response tested.

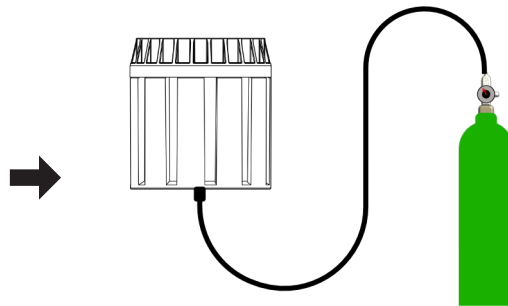
CAUTION: Do not calibrate the G-Pods in a windy environment. Wind can dilute the calibration gas and effect calibration accuracy.

13.3 HCN G-Pod Response Test

Make sure the HCN sensor reads zero before the response test is started.

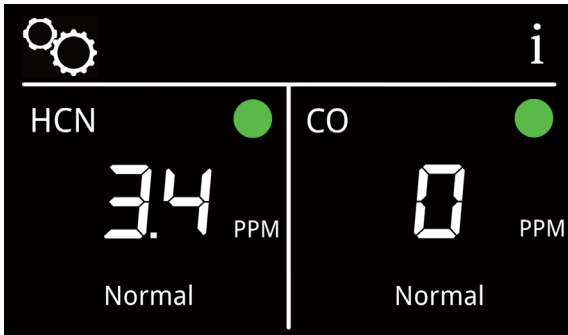


Step 1. Note the current gas readings.



Step 2. Connect HCN 10 PPM calibration gas.

Turn on the gas. The gas must flow for 3 minutes.



Step 3. HCN detected, continue test.



Step 4. HCN detected gas level after 3 minutes.

The HCN G-Pod has passed its response test and can be used. The reading was in the tolerance of $\pm 10\%$ for the applied calibration gas.

Examples of G-Pod response outside of tolerance.

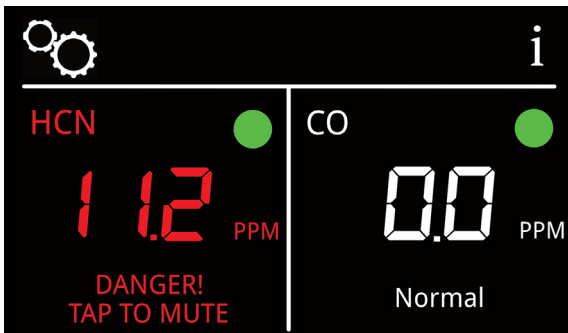


Figure 36. HCN response test too high.

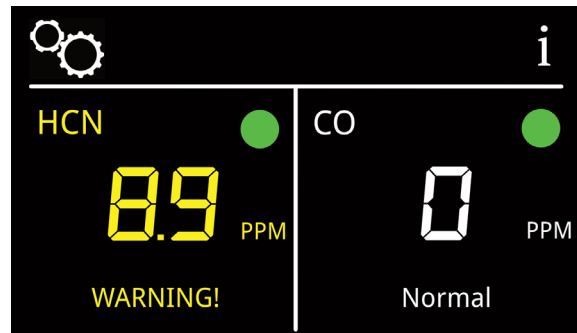


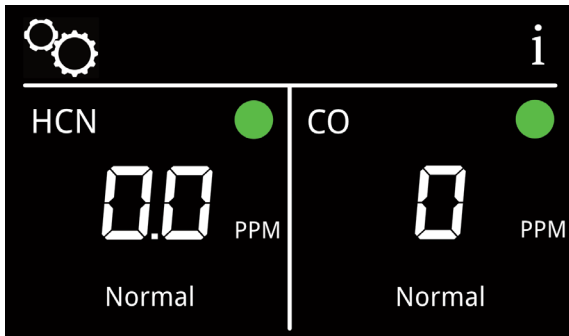
Figure 37. HCN response test too low.



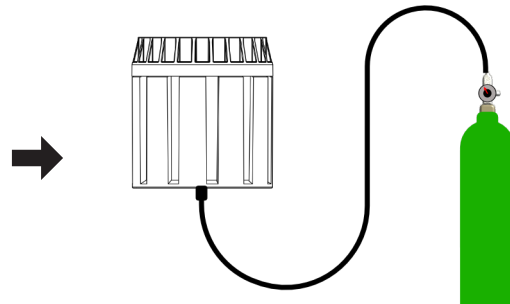
WARNING! The response test has failed. You must calibrate the HCN G-Pod. Incorrect calibration can result in injury or death to personnel.

13.4 CO G-Pod Response Test

Make sure the CO G-Pod shows zero before the test is started.

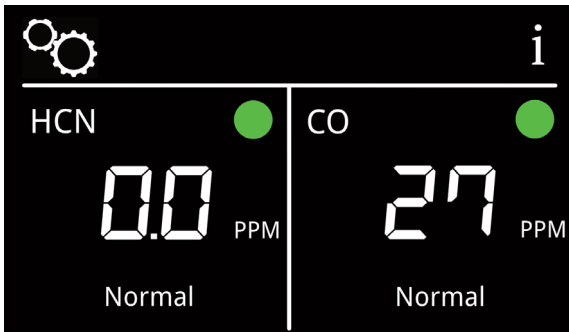


Step 1. Note the current gas readings.

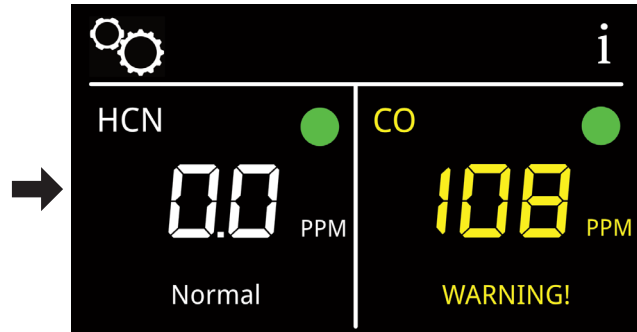


Step 2. Connect CO 100 PPM test gas.

Turn on the gas. The gas must flow for 1 minute.



Step 3. CO detected, continue test.



Step 4. CO detected gas level after 1 minute.

The CO G-Pod has passed its response test and can be used. The reading was in the tolerance of $\pm 10\%$ for the applied test gas.

Examples of CO G-Pod response outside of tolerance.

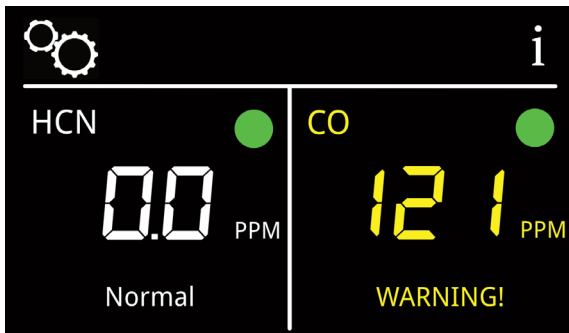


Figure 38. CO response test too high.

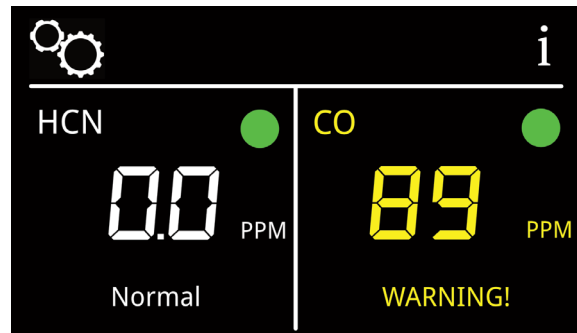


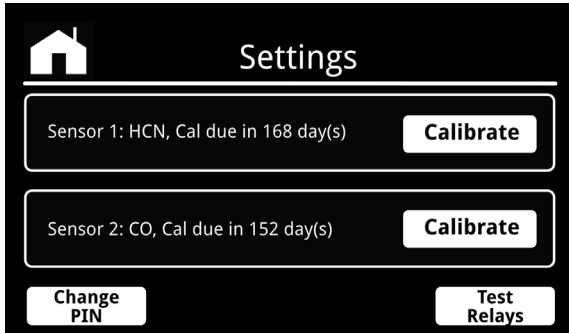
Figure 39. CO response test too low.



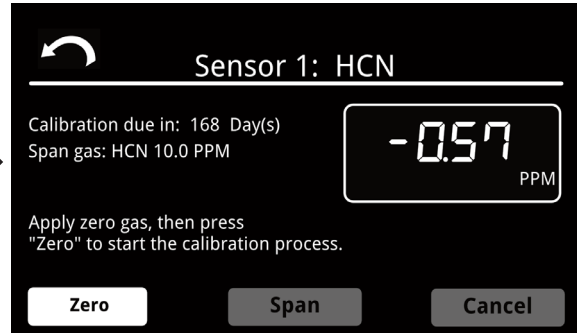
WARNING! The response test has failed. You must calibrate the CO G-Pod. Incorrect calibration can result in injury or death to personnel.

13.5 HCN G-Pod Zero Calibration

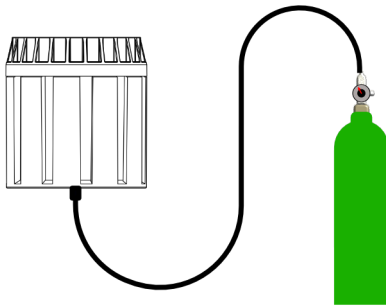
Access the Settings screen. See section [12.3 Settings](#).



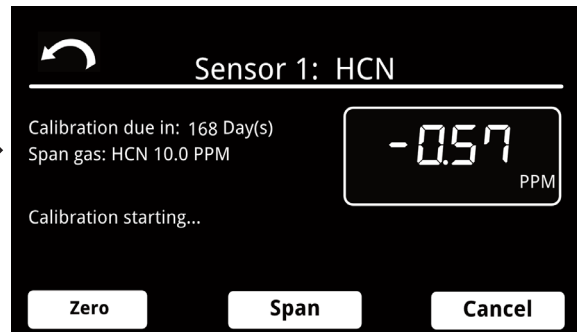
Step 1. Push the Calibrate button for Sensor 1.



Step 2. Current sensor reading shown.

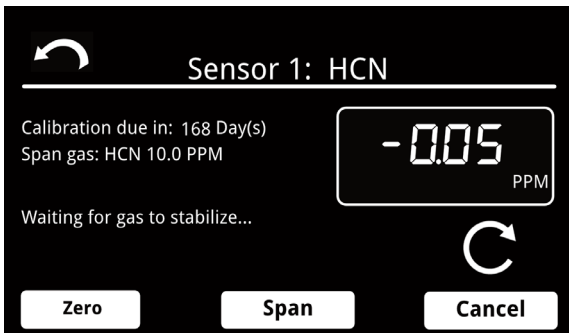


Step 3. Connect zero-grade air.

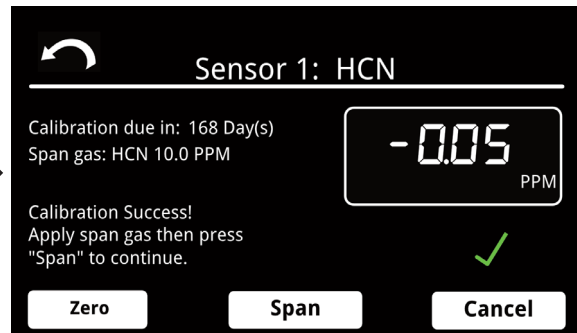


Step 4. Turn the gas on. Push Zero

Use zero-grade air unless you know the ambient air does not contain HCN.



Step 5. Zero calibration started.

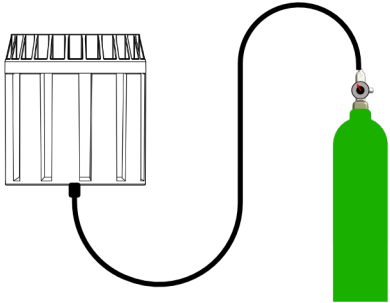


Step 6. Zero calibration completed. Turn gas off.

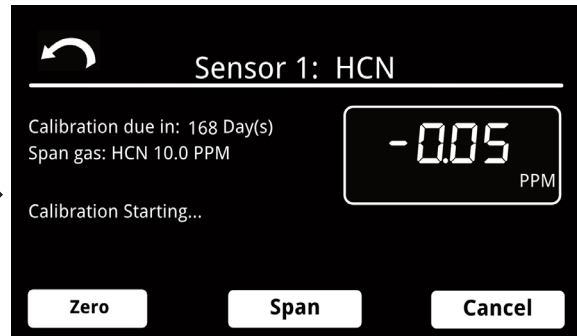
If an error occurs please consult [section 14 Error Messages](#).

13.6 HCN G-Pod Span Calibration

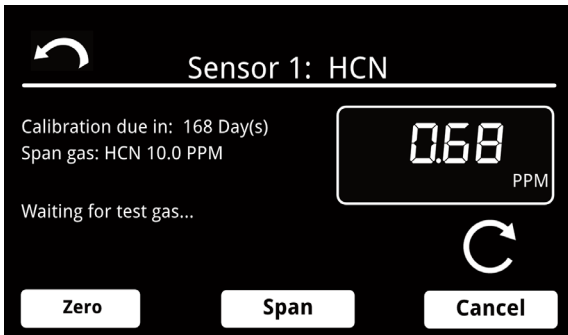
Zero calibration must be completed before span calibration.



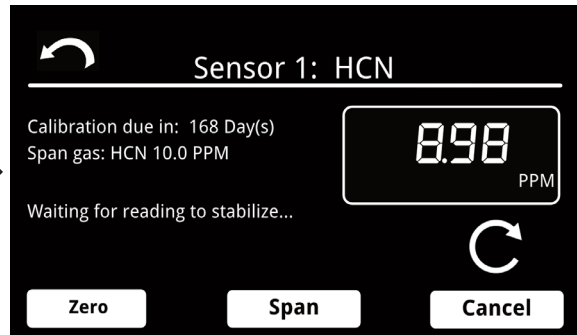
Step 1. Connect HCN 10 PPM calibration gas.



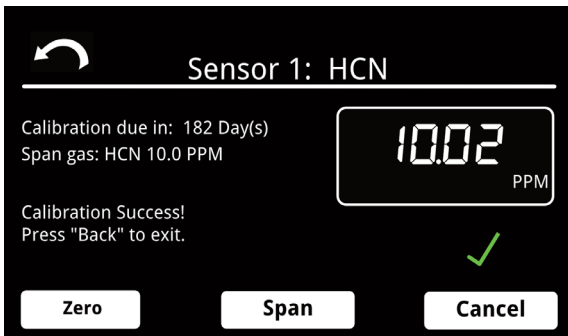
Step 2. Turn the gas on. Push Span



Step 3. Span calibration has started.



Step 4. Calibration gas detected.



Step 5. Span calibration has completed.

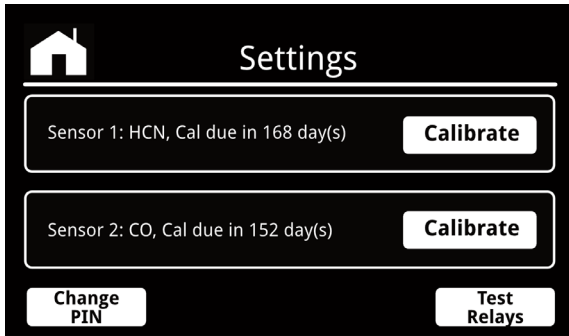
NOTE: When calibration is successful, the calibration due date is set to 182 days (6 months).

Push the to return to the Settings screen.

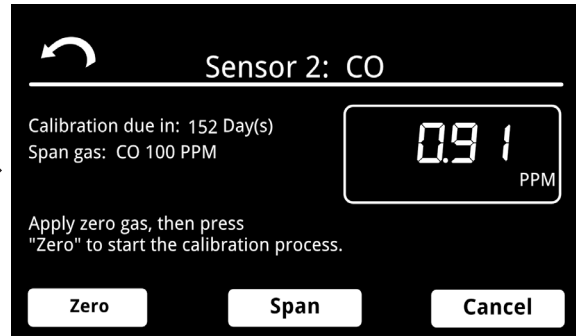
If an error occurs please consult [section 14 Error Messages](#).

13.7 CO G-Pod Zero Calibration

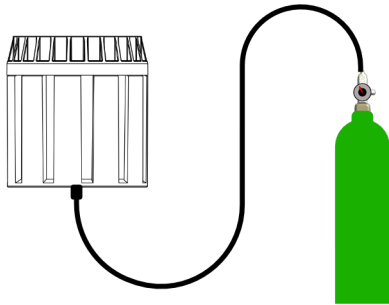
Access the Settings screen. See section [12.3 Settings](#).



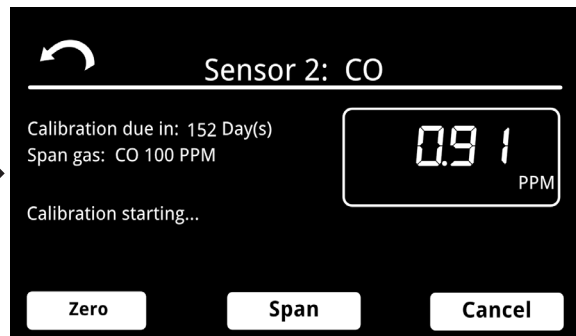
Step 1. Push the for sensor 2.



Step 2. Current sensor reading shown.

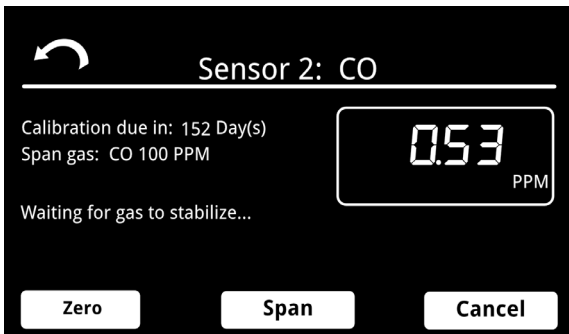


Step 3. Connect zero-grade air.

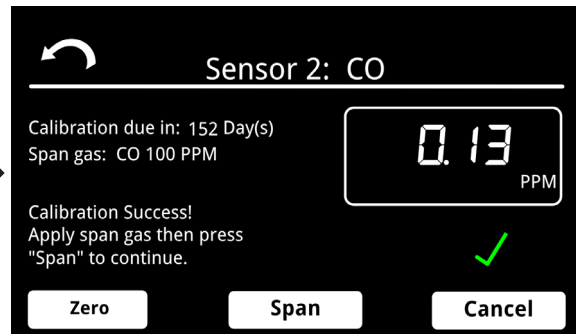


Step 4. Turn the gas on. Push

NOTE: Use zero-grade air unless you know the ambient air does not contain CO.



Step 5. Zero calibration started.

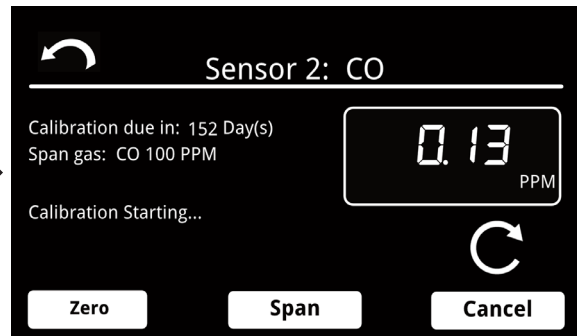
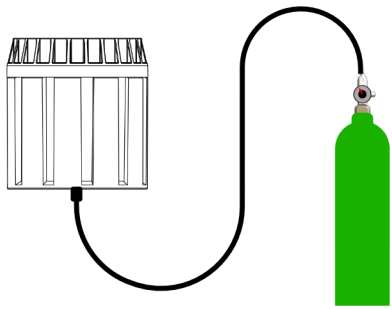


Step 6. Zero calibration completed. Turn gas off.

If an error occurs please consult [section 14 Error Messages](#).

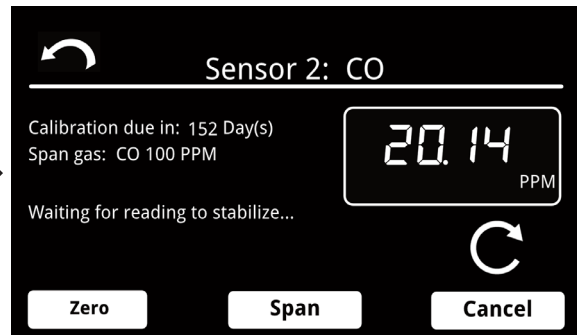
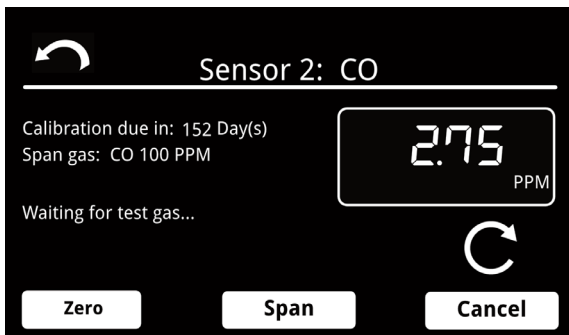
13.8 CO G-Pod Span Calibration

Zero calibration must be completed before span calibration.



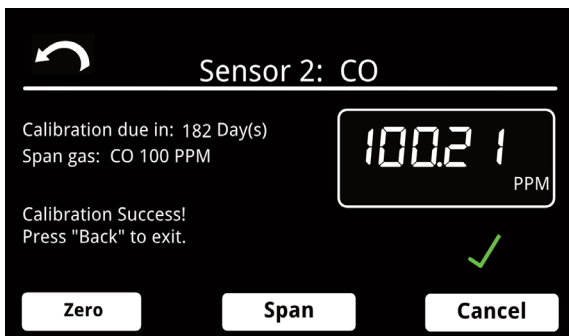
Step 1. Connect CO 100PPM calibration gas.

Step 2. Turn the gas on. Push




Step 3. Span calibration has started.

Step 4. Calibration gas detected.



Step 5. Span calibration has completed.

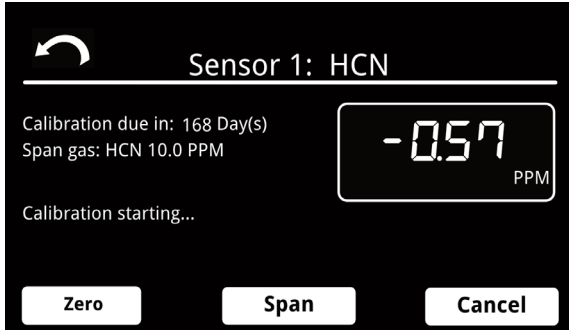
NOTE: When calibration is successful, the calibration due date is set to 182 days.

Push the  to return to the Settings screen.

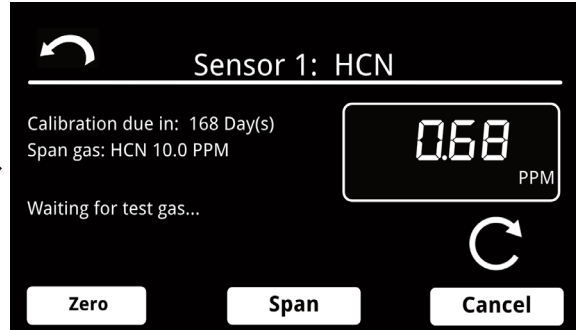
If an error occurs please consult [section 14 Error Messages](#).

13.9 Cancel Calibration

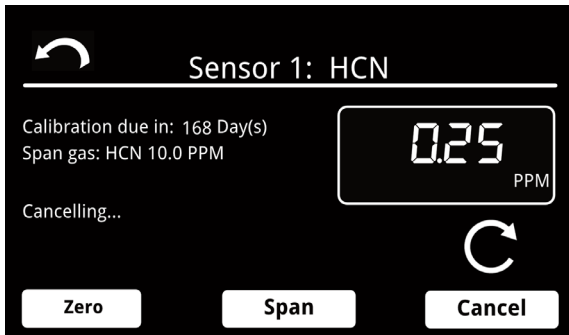
NOTE: Cancel will stop the calibration and the previous calibration information will be kept.



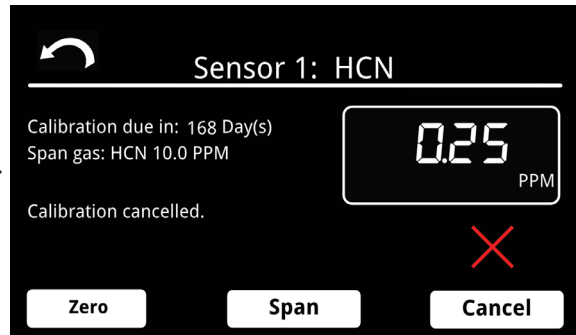
Step 1. Zero calibration started.



Step 2. Zero gas applied.



Step 3. Cancel button pressed.



Step 4. Calibration cancelled.

Push or to continue the calibration or to return to the settings screen.

13.10 Calibration Due

The touchscreen shows a Calibration due message to tell the user the G-Pod must be calibrated. Minimum calibration periods are 182 days.

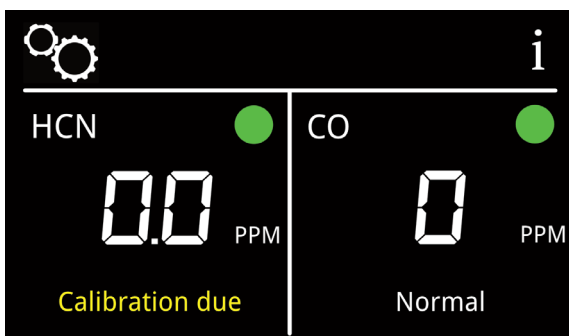


Figure 40. Sensor calibration due.

G-Pods continue to detect gas when the calibration period has expired. Make sure the G-Pod is recalibrated to maintain its accuracy.

14 Error Messages

Error State	Meaning	Explanation	Solution
1	Sensor state is not normal	Displayed when the G-Pod is in one of two states: Sensor Warmup Sensor Stabilizing	Make sure G-Pod is in its Normal state before you attempt a calibration
6	Timeout - No gas detected	G-Pod did not detect the expected calibration gas concentration.	Check the gas supply Make sure the G-Pod is protected from wind Replace the G-Pod
7	Timeout - Gas reading will not stabilize	The gas detected is not stable	Check the gas supply Make sure the G-Pod is protected from wind Replace the G-Pod
8	Outside calibration temperature range	G-Pods must be calibrated within this temperature range: HCN -10 °C to +35 °C CO -10 °C to +45 °C	Calibrate G-Pod within its calibration temperature range

Figure 41. Error messages.

14.1 Communications Error

The Sensor Platforms and G-Pods constantly exchange information with the touchscreen. If the touchscreen cannot receive this information the touchscreen will alert the user.

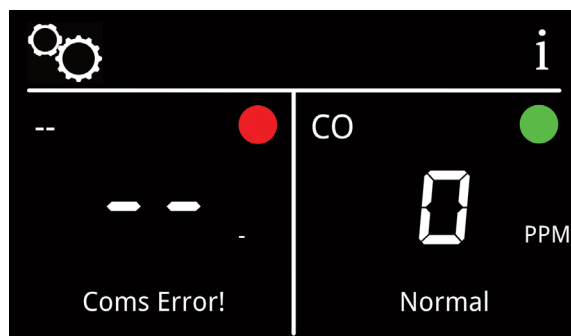


Figure 42. Sensor communication error.

Make sure a G-Pod is fitted and is working. Communication errors can be caused by faulty or damaged wiring or a damaged Sensor Platform.

15 Specifications

Specifications are subject to change without notice.

15.1 Electrical

Description	Specification
VBAT	+9 to +30VDC
ACC	+9 to +30VDC
Touchscreen Max Power Consumption	2W
Sensor Platform Max Power Consumption	<1W
Output Relays	5A @250VAC 5A @ 30VDC 0.2A @ 300VDC

Figure 43. Electrical Specifications

15.2 Construction

Description	Specification
Touchscreen Material	ABS
Sensor Platform Material	SS316L
Touchscreen Weight	220g
Sensor Platform Weight	230g
Touchscreen Panel Mount Dimensions	W116.0 mm x H77.5 mm x D 20 mm
Sensor Platform Mounting Thread	M25 x 1.5 P

Figure 44. Construction Specifications.

15.3 Environmental

Description	Specification
Touchscreen IP Rating	IP40
Sensor Platform IP Rating	IP66/IP68 (1.2 m for 1½ hours)
Touchscreen Temperature Range	0°C to +40°C
Sensor Platform Temperature Range	-20°C to +70°C
Touchscreen Humidity Range	5% rh to 95% rh
Sensor Platform Humidity Range	5% rh to 95% rh

Figure 45. Environmental Specifications.

NOTE: G-Pods will operate beyond their stated ranges, but G-Pod accuracy is not guaranteed.

15.4 G-Pod Dimensions

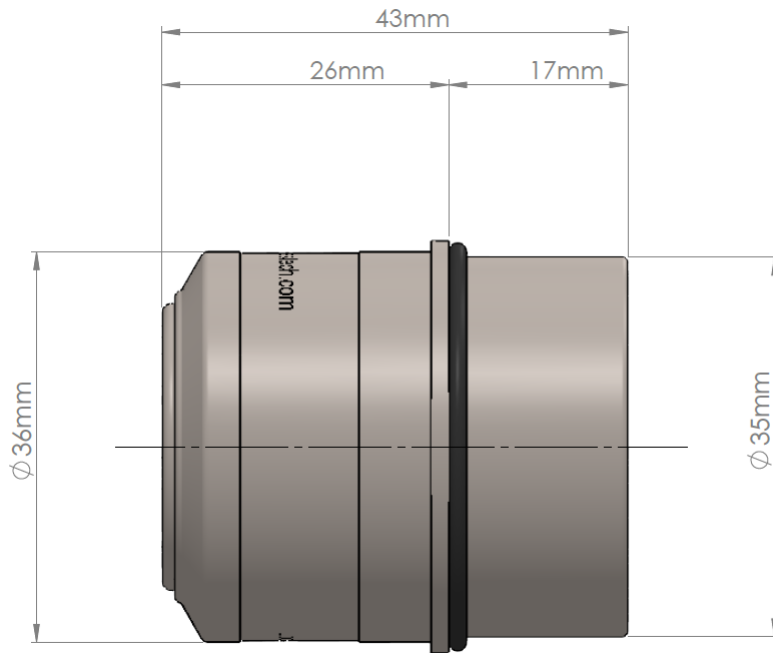


Figure 46. G-Pod dimensions.

15.5 Sensor Platform Dimensions

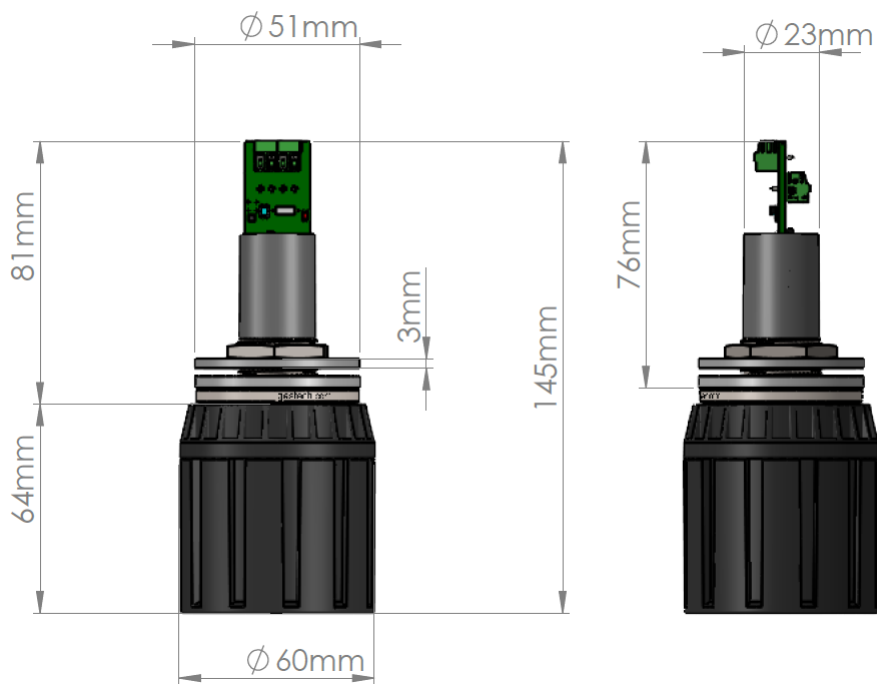


Figure 47. Sensor Platform dimensions.

15.6 Touchscreen Dimensions

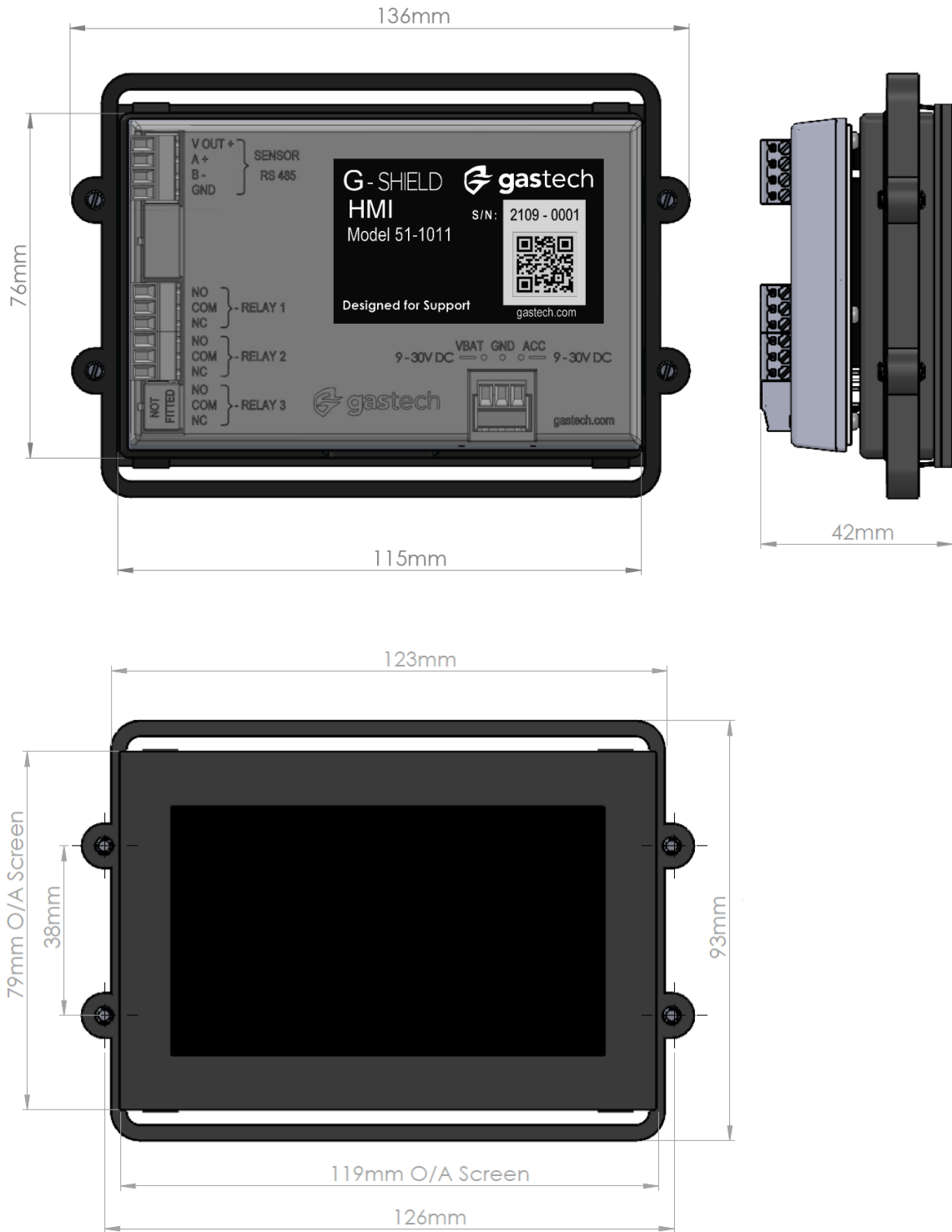


Figure 48. Touchscreen dimensions.

15.7 Touchscreen Enclosure Dimensions

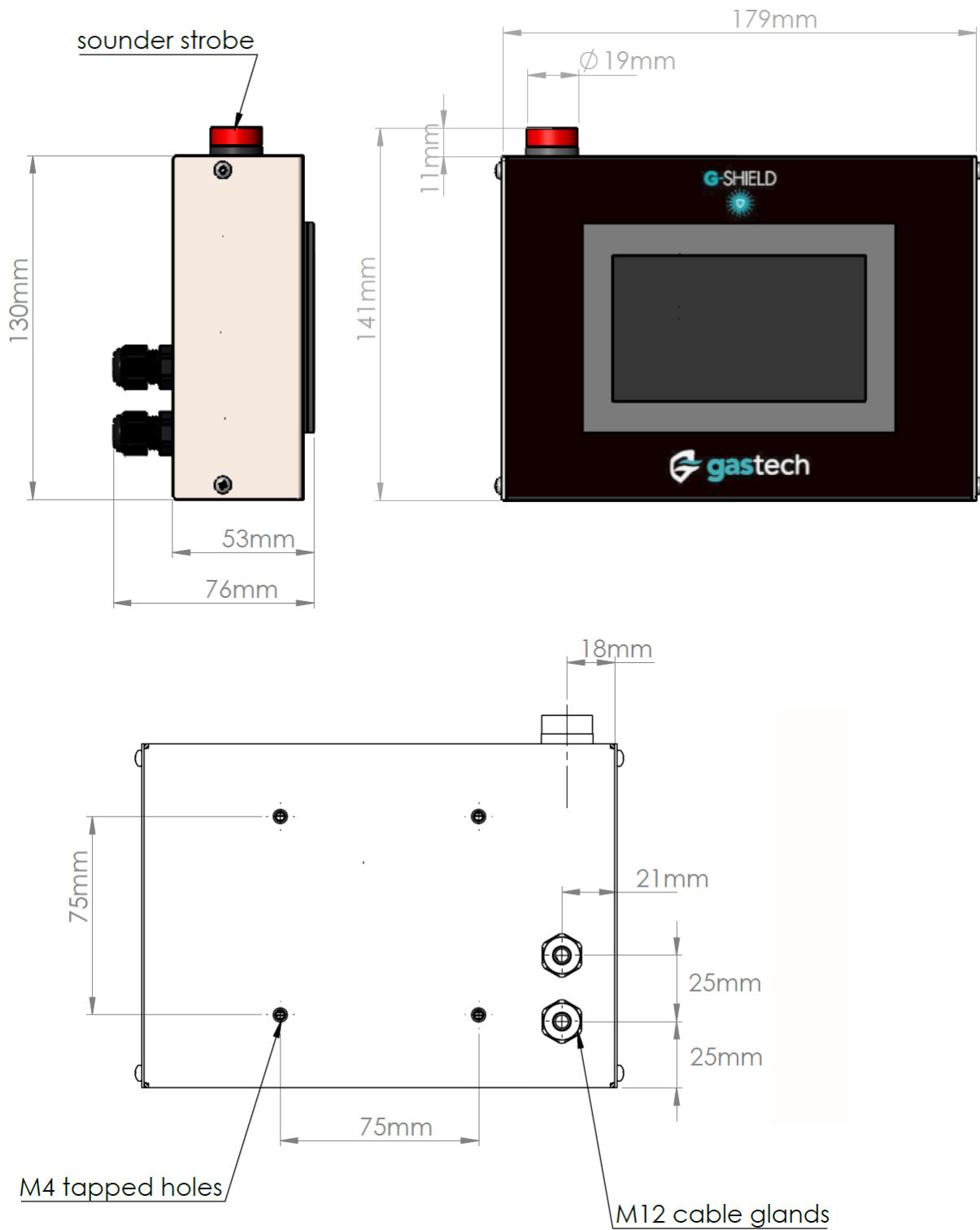


Figure 49. Touchscreen enclosure dimensions.

16 Spare Parts List

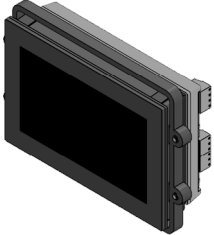
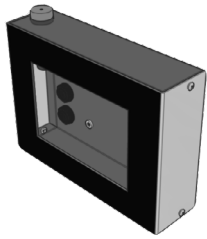

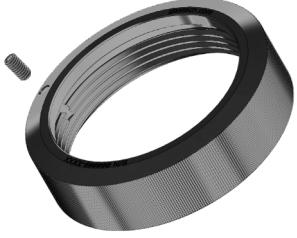



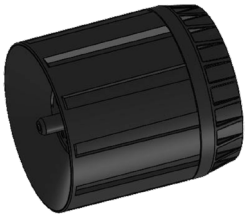

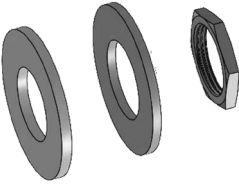
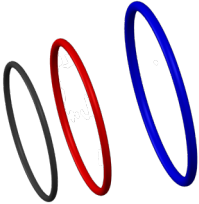
<p>Description: Touchscreen</p> <p>Package contents:</p> <ul style="list-style-type: none"> Touchscreen Display Touchscreen PCBA Touchscreen PCBA Cover Touchscreen PCBA Connectors 	 <p>P/N: 51-1011-00</p>
<p>Description: Enclosure</p> <p>Package contents:</p> <ul style="list-style-type: none"> Enclosure Sounder/Buzzer M12 Cable Glands (Qty 2) 	 <p>P/N: 21-1011-00</p>
<p>Description: Sensor Platform with G-Pod Dummy</p> <p>Package contents:</p> <ul style="list-style-type: none"> Communication Bushing Bushing Nut with Grubscrew Splash Guard G-Pod Dummy 	 <p>P/N: 65-1011-00</p>
<p>Description: Bushing Nut with grubscrew</p> <p>Package contents:</p> <ul style="list-style-type: none"> Bushing Nut Grubscrew 	 <p>P/N: 11-1000-06</p>
<p>Description: G-Pod Dummy</p> <p>Package contents:</p> <ul style="list-style-type: none"> G-Pod Dummy G-Pod O-Ring 	 <p>P/N: 65-2000-00</p>

Figure 50. List of spare parts.

<p>Description: G-Pod CO</p> <p>Package contents:</p> <p>G-Pod CO G-Pod O-Ring</p>	 <p>P/N: 65-2000-CO-01</p>
<p>Description: G-Pod HCN</p> <p>Package contents:</p> <p>G-Pod CO G-Pod O-Ring</p>	 <p>P/N: 65-2000-HCN-01</p>
<p>Description: Splash Guard</p> <p>Package contents:</p> <p>Splash Guard</p>	 <p>P/N: 35-1011-00</p>
<p>Description: 1.3 mm Hex key</p> <p>Package contents:</p> <p>L-Shaped Hex key</p>	 <p>P/N: 25-0001-01</p>
<p>Description: Sensor Platform Nut and Washer Pack</p> <p>Package contents:</p> <p>Sensor Platform M25 Nut (Qty 1) Sensor Platform M25 Washer (Qty 1) Sensor Platform M25 Gasket (Qty 1)</p>	 <p>P/N: 11-1000-01</p>

<p>Description: Touchscreen Connectors Pack</p> <p>Package contents:</p> <p>4-pin Screw Terminal Plug (Qty 1) 3-pin Screw Terminal Plug (Qty 3)</p>	<p>No Image Available</p> <p>P/N: 45-1011-01</p>
<p>Description: Touchscreen Fittings Pack</p> <p>Package contents:</p> <p>Enclosure Screws M3x10 (Qty 4) Enclosure Cable Glands M12 (Qty 2)</p>	<p>No Image Available</p> <p>P/N: 12-1011-01</p>
<p>Description: Sensor Platform O-Ring Pack</p> <p>Package contents:</p> <p>Bushing Nut O-Ring (Qty 1) Splash Guard O-Ring (Qty 1) G-Pod O-Ring (Qty 1)</p>	 <p>P/N: 07-1000-01</p>

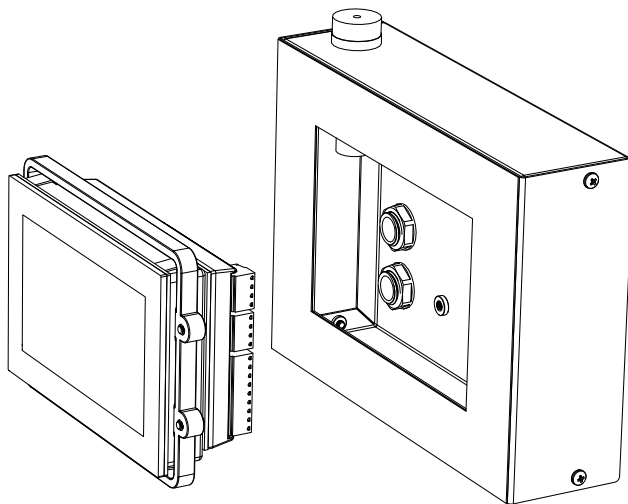


Figure 51. Touchscreen enclosure assembly.

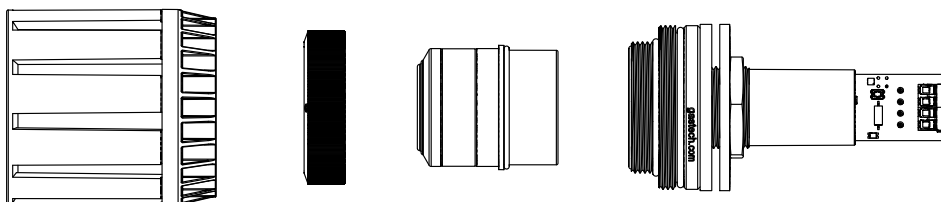


Figure 52. Sensor Platform assembly.

17 Maintenance

Make sure the G-Pods are calibrated at least every 6 months. The Splash Guard must be kept clear of debris. You must inspect the Splash Guard regularly.

17.1 Clean the Splash Guard

Remove the Splash Guard from the Sensor Platform. Use a brush to remove debris and then wash in potable water. Make sure the Splash Guard is dry and then install it on the Sensor Platform.

17.2 Dummy Plug

You must install a Dummy Plug if a G-Pod is removed from the Sensor Platform. The Dummy Plug prevents damage to the Sensor Platform and gives a visual indication that a G-Pod is not installed.

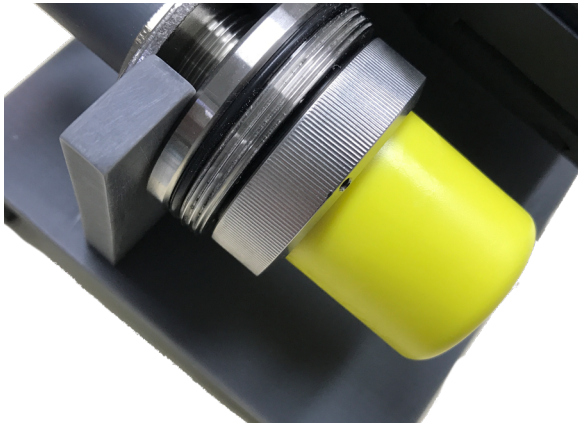


Figure 53. Dummy Plug fitted to Sensor Platform.

18 Gastech Policy Statements

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Revisions to manual

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