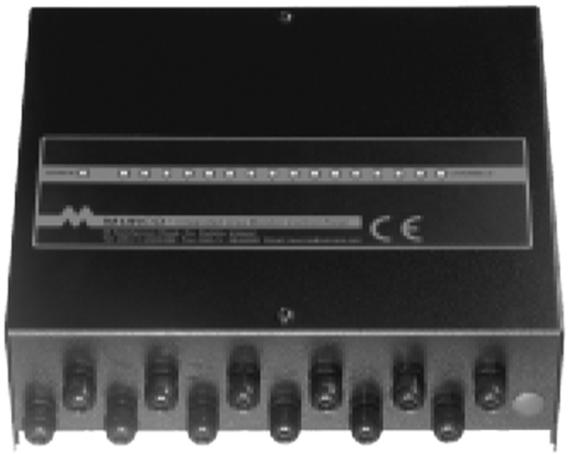
IAM – Integrated Area Monitor

Check / Calibration Procedure*



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***Technician use only**

These units must be checked / tested and /or calibrated *by a suitably qualified technician who must* test or calibrate *the unit in accordance with the instructions as provided or set out in the relevant manual and the standards set down in their particular industry/country.*
Suitably qualified operators *of the unit should be aware of the regulations and standards set down by their industry/country for the* testing or calibration *of this unit. These notes are only intended as a guide and insofar as permitted by law the manufacturer accepts no responsibility for the* Calibration and Testing *or operation of this unit.*
Failure to test or calibrate *the unit in accordance with the then applicable instructions and with industry guidelines may result in serious injury including death and the manufacturer is not liable for any loss injury or damage arising from improper* testing or calibration *or inappropriate use of the unit.*
The testing or calibration *of the unit must be carried out by a suitably qualified technician, in accordance with the* testing or calibration *manual and in compliance with locally applicable guidelines and regulations.*

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1- Introduction

The frequency and nature of testing or calibration may be determined by local regulation or standards.

EN378 and the FGAS Regulation require an annual check in accordance with the manufacturer's recommendation.

Murco recommends annual checks by resetting units electrically to the factory calibration settings and carrying out a bump test to ensure correct operation. This procedure should also be carried out to ensure correct functionality if the IAM has been exposed to a large leak.

Bump Test: This consists of exposing the sensor to a gas. The objective is to establish if the sensor is reacting to the gas and all the sensor outputs are working correctly.

It is required in EN 378 to record the test results in the Logbook.

Before you carry out the test or calibration:

1- Advise occupants, plant operators, and supervisors.
2- Check if the IAM is connected to external systems such as sprinkler systems, plant shut down, external sirens and beacons, ventilation, etc. and **disconnect as instructed by the customer.**
3- Deactivate the alarm delay if active by removing jumpers at HD1 (see Fig 1 below)
4- For Bump Test or Calibration IAMs should be powered up overnight.

2- Electrical Set Up

Electrical set up returns the unit to the factory calibration values.

This procedure is used to reset the units every 12 months as part of the annual check.

Tools required:

1- A voltmeter
2- Murco's set point values, now shown on the rating label
3- Estimate 10 min per sensor

Diagram 1. Rear view – default settings

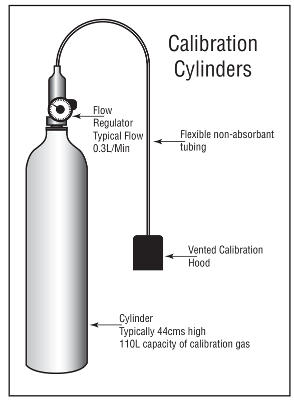
Procedure

- You need to make sure the IAM is stabilised (powered up for at least 24 hours) and that there is no delayed response set on the jumpers.
- Connect the voltmeter, 0-10V scale, between VS and V0 at the back of the board and check the reading.
- If necessary adjust the pot P1 (See Diagram 1) so that the voltmeter shows the factory standby voltage which is recorded on the rating label on the side of the IAM.
- Then connect the voltmeter, 0-10V scale, between VREF and VO at the back of the board and check reading. Adjust using P2 if necessary using the alarm point voltage shown on the rating label.

If this information is not there you need to establish serial no. and what gas is being used and contact Murco for the appropriate set point values.

2 - BUMP TEST (every year) / Gas Calibration

Having electrically checked, (and adjusted if required) the two set points, carry out a bump test to check function. Ideally bump tests are conducted on site in a clean air atmosphere.



Monitor the voltage between VS and VO

Expose the sensors to test gas using a calibration cylinder of the target gas at the correct concentration e.g. R410A at 1%. The red LED will light showing the system is in alarm. If a delayed response is set it will prevent the siren sounding or relay switching for the duration of a preset delay. Check that alarm lights and relays are activated.

If your IAM is on manual reset mode, after the gas has cleared, you can reset the alarm condition by using the reset button.

If the alarm is not activated (probably due to aging of the sensor) record the voltage reading. Then using the voltometer between VREF and VO, adjust P2 to newly recorded voltage and the alarm activates. This recalibrates the unit. Allow the the gas to clear (approx 5 mins). Once stable, then record the new setting on the rating label for use in future set –ups.

If appropriate, enable the alarm delay by re-fitting the jumper link at **HD1**.
Position 1 off – Position 2 off = No delay
Position 1 off – Position 2 on = 5 min delay
Position 1 on - Position 2 off = 10 min delay
Position 1 on – Position 2 on = 15 min delay

Factory defaults are shown below. The jumper settings corresponding to 0 delay are Position 1 and 2 off (no jumper).

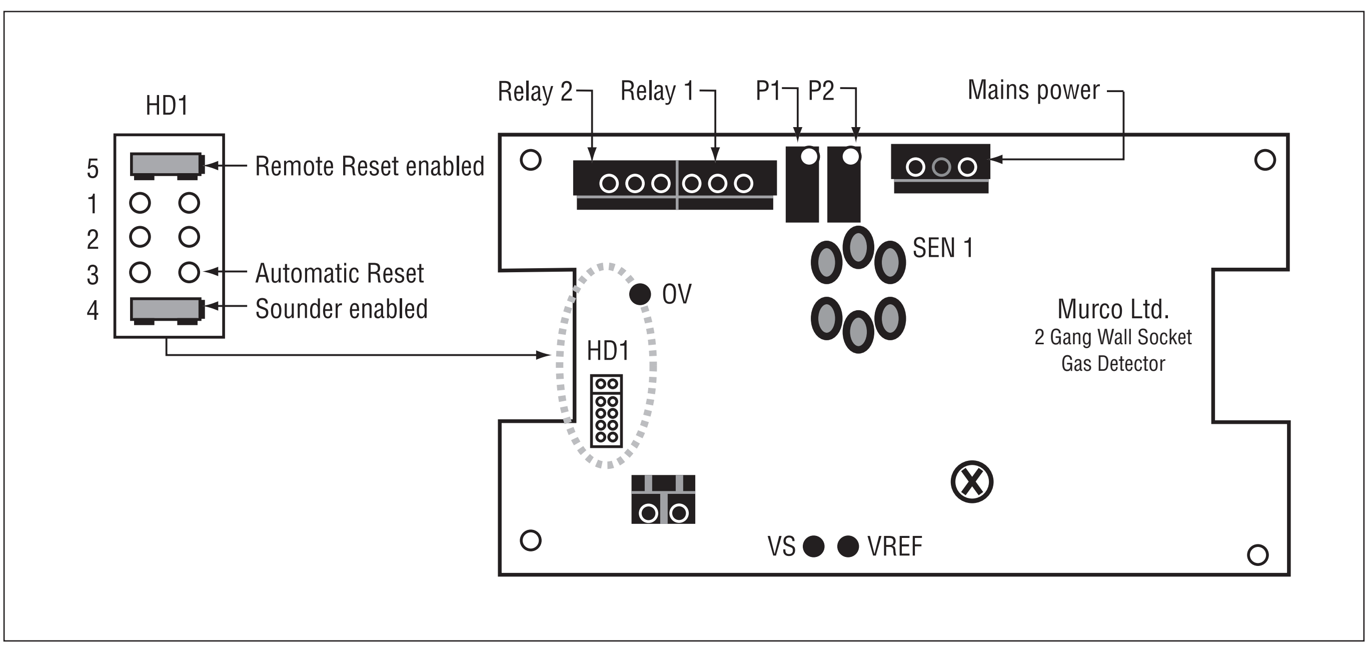
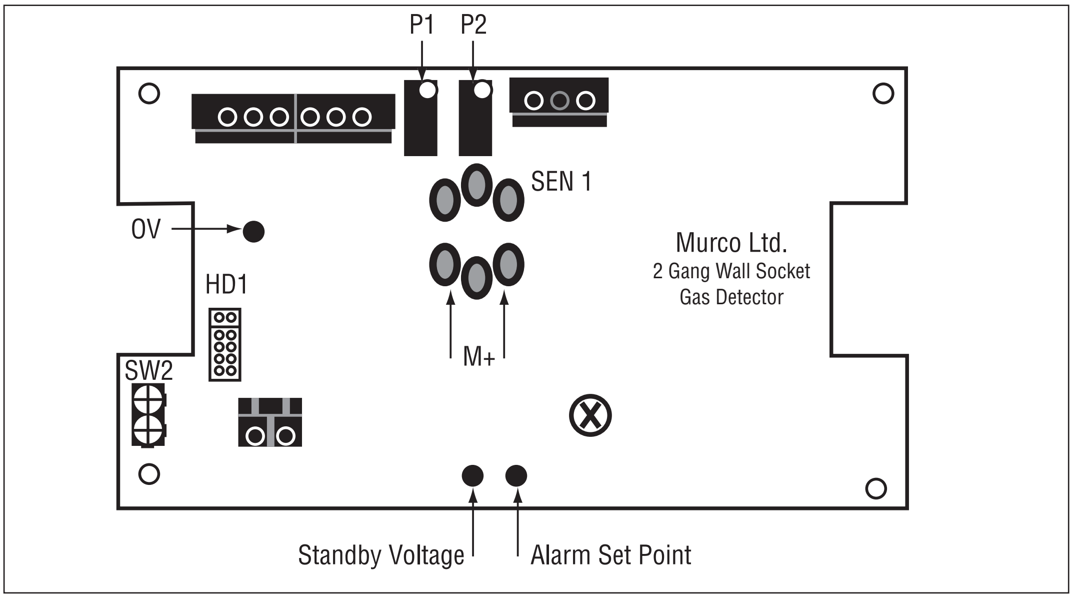


Diagram 2. Rear view –Voltmeter Connections



4- IAM-C Panel

If the installation has an IAM-C panel, when testing the sensors also ensure that the panel's functions are activating accordingly:

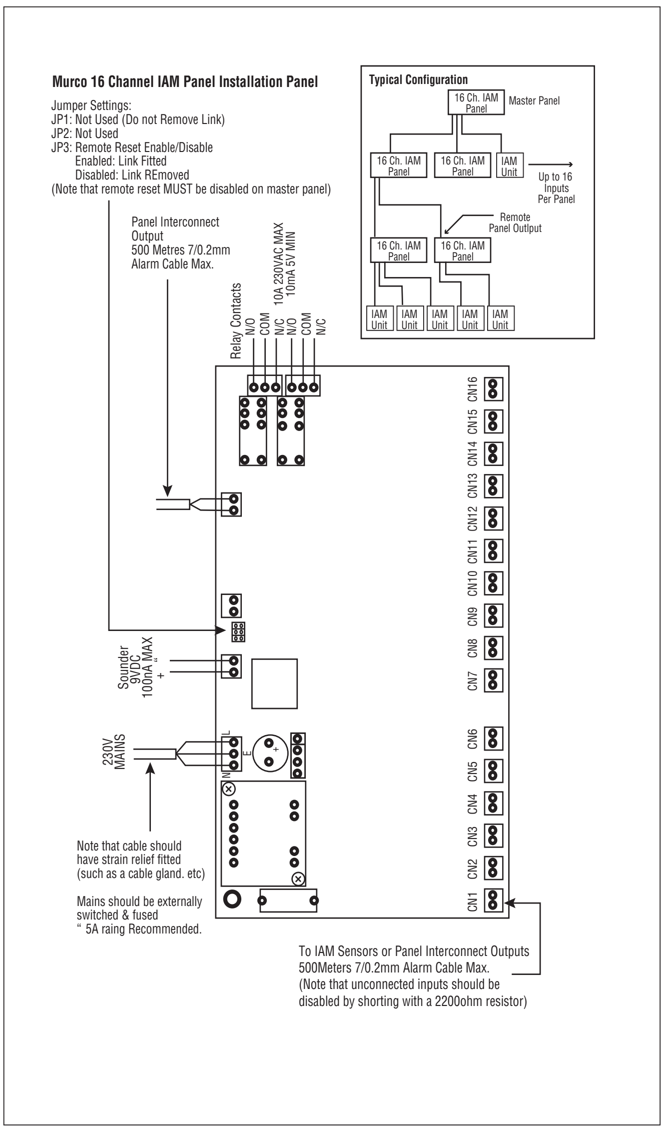


Diagram 3

Red LED indicating which sensor is on alarm
Siren – if connected
Relays – if enabled
Reset Function – if enabled, to enable remove jumper HD3 on master control panel

IAM Test Certificate (Example)

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(Download original from our web site **www.murcogasdetection.com**. Use in Conjunction with the Murco Check Calibration Procedure)

Product Description: IAM **Serial Number**: 12345

Date of First Calibration: (see Rating Label) 25/10/05 **Date of Last Calibration:** 25/10/05

Type/Range of Test Gas: Cylinder 1000ppm R404a, batch no xxxx

1. Electrical Setting Procedure – record Voltages

Reset units to Factory Calibration Setting.

	Factory, Set Point on Rating Label	Adjusted/Final set point (if applicable)
Standby Voltage		
Alarm Voltage		

2. Carry out Bump Test (Set delay to zero)

✓

Power (Green LED) ☐

Visual Alarm (Red LED) ☐

Sounder Operating ☐

Relay Operating ☐

Remote System if connected to relay ☐

IAM – C panel if connected ☐

System Passed ☐

If system failed, carry out a gas calibration involving adjustment of Pot P1 and record the new set point in the record table above.

3. On site Gas Calibration

System Passed ☐

If the IAM did not respond correctly and could not be recalibrated due to age, exposure to gas etc, then the IAM or Sensor element should be replaced. If the sensor is replaced repeat the Gas Calibration after stabilisation.

System Passed ☐

We hereby certify that the above specified test procedure has been performed and the IAM is performing as specified

Test Performed by ____________________ ____________

Signature Date