Honeywell

Quick Start Guide

MDA Scientific Midas

MDAS-E-02X

MDA Scientific
Midas® Gas Detector

OFFICIAL DISTRIBUTOR

GazDetect

contact@gazdetect.com
+33 (0)1.64.09.35.16

1. Introduction

The Midas® gas detector is an extractive gas sampling system that draws a sample locally or from a remote point to a sensor cartridge that is located inside the detector's chassis. A wide range of toxic, flammable and oxygen gas sensor cartridges are available that enable detection of gases used or generated in the Semiconductor and other manufacturing industries.

The Midas® gas detector is comprised of 4 main parts: the main chassis, the mounting bracket assembly, the sensor cartridge and the unit cover. Diagram 1 details the Midas® general arrangement. Additionally there are optional Pyrolyzer modules required for the detection of NF_3 and PFCs and an optional LonWorks® interface is available.

This Quick Start Guide provides basic installation, setup and operation information for the main detector unit. For more detailed information on other features and options, please refer to the Midas® Operating Manual.

Diagram 1. Midas® general arrangement exploded view

Unit cover

Main chassis

Mounting bracket assembly

Sensor Cartridge
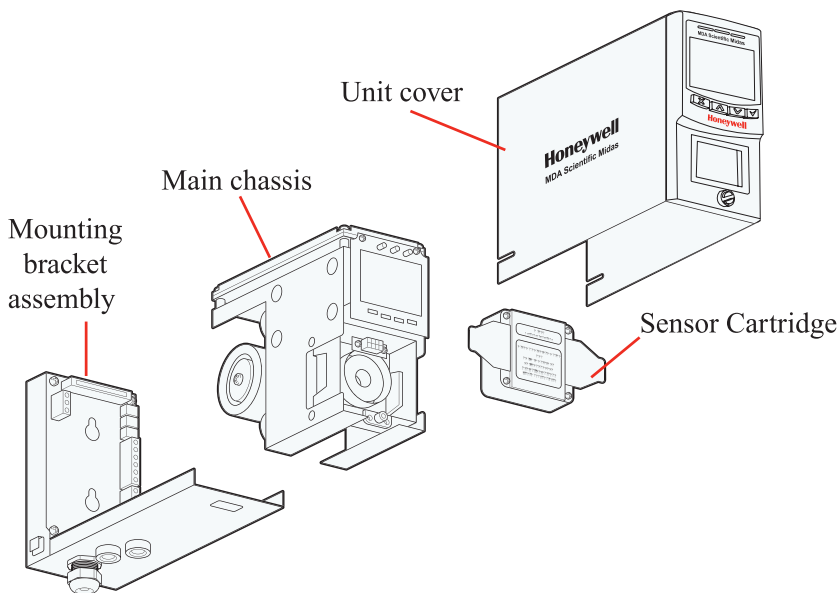
2. Mounting Details

The Midas® gas detector has an integral mounting bracket assembly that is easily mounted to a suitable vertical surface such as a wall, tool housing, mounting plate on a pole etc.

Drill Template
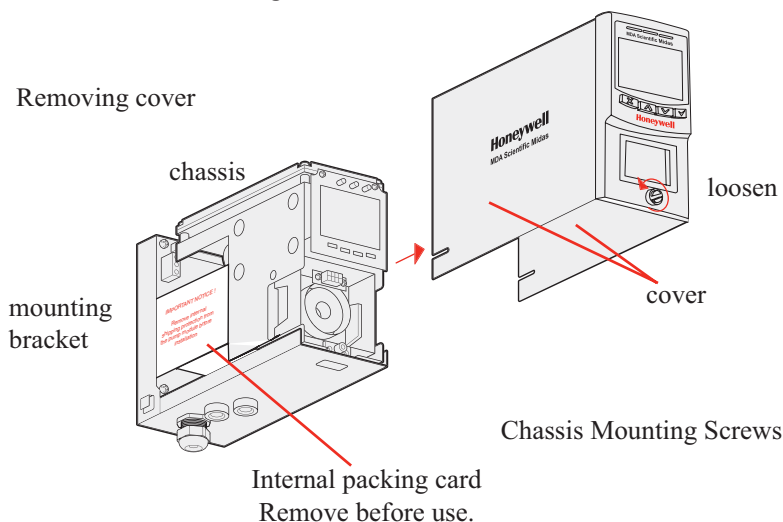
Drill 2x M4 holes (0.15 8in)

58.50mm (2.3 in)
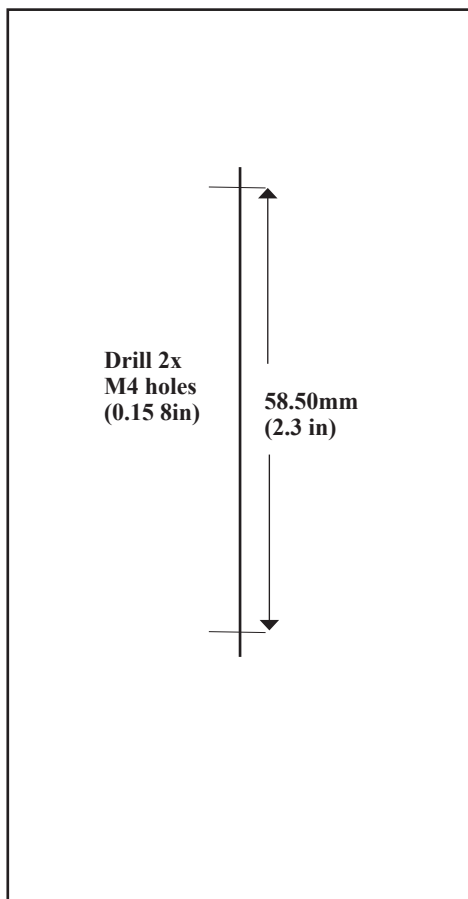
Note

When reproducing this diagram, be sure to check dimensional accuracy before drilling.

The following steps and diagrams show how to separate the mounting bracket assembly from the main chassis and mount it on a vertical flat surface.
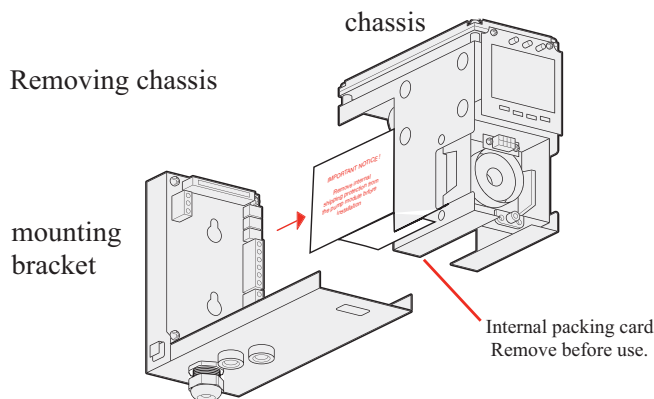
1. Unscrew the thumbscrew located on the front panel.

2. Remove the cover by pulling it forwards off the main chassis. On new Midas® units, be sure to remove the internal packing card securing the pump. Failure to remove this packing will result in damage to the Midas® unit. (See diagram below)

3. Unscrew the two retaining screws located at the bottom front of the chassis.

4. Holding the mounting bracket assembly with one hand use the other to carefully pull the main chassis forward to disconnect it from the mounting bracket assembly.

5. Using the drill template provided drill two holes 2.3 in (58.50mm) vertically apart for 2 x round head M4 screws.

6. Partially screw the fixings into the mounting surface.

7. Place the mounting bracket assembly over the screws so they pass through the mounting holes and then slide down to locate in the slots.

8. Tighten the screws to secure the mounting bracket assembly.
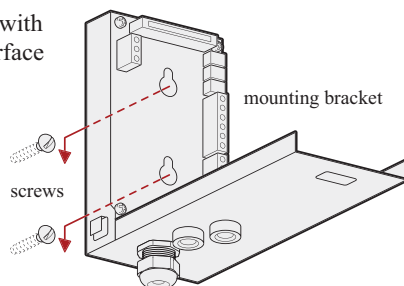
Diagram 3. Mechanical installation

Removing cover

chassis

loosen

cover

mounting bracket

Chassis Mounting Screws

Internal packing card Remove before use.

2. Mounting Details (cont'd)

chassis

Removing chassis

mounting bracket

IMPORTANT NOTICE!
Remove internal shipping protection from Re-pump module before installation

Internal packing card
Remove before use.

Attaching Bracket with screws on a flat surface

mounting bracket

screws

Optional DIN Rail Mounting

DIN Rail Bracket (MIDAS-A-036)

Spacer Bracket

2x M4 Screws
Secures Midas® to
Spacer Bracket

4x M3 Screws
Secures DIN Rail Bracket
to Spacer Bracket
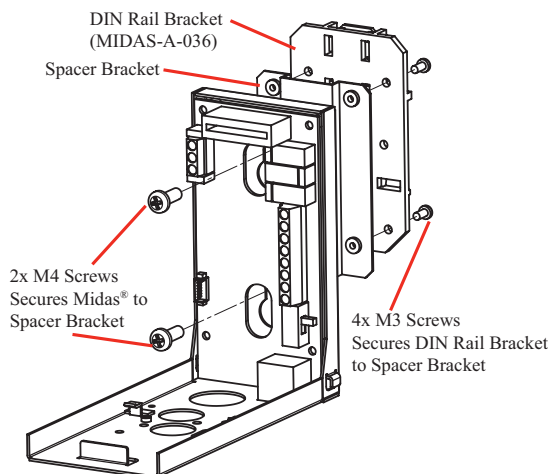
3. Electrical Installation

Access for the electrical wires to the terminal module is made via the PG16 cable gland located at the bottom of the mounting bracket assembly. The cable gland can be removed and replaced with a suitable conduit fitting if required. The wire routing of a typical installation is shown in the diagram below.

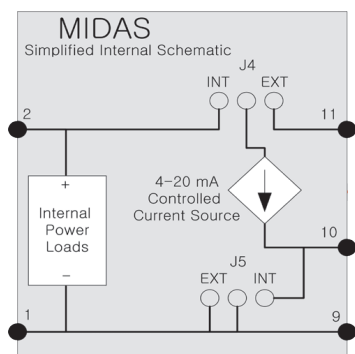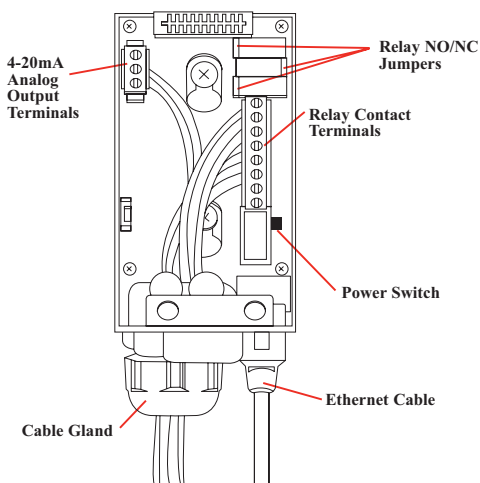**Diagram 4. Simplified Schematic**   **Diagram 5. Wiring Diagram4**

The terminals used are suitable for conductors of 24 to 14 AWG (0.5 to 1.8mm Dia.). The use of 16 AWG (1.5 mm Dia.) conductors is recommended.

If Power over Ethernet (PoE) is used to power the device, then 24 VDC power must not also be connected to the device, (or conversely if 24 VDC is used to power the Midas®, then electrical power via the Ethernet port must not be applied). Failure to observe this requirement may cause damage to the gas detection system and will not be covered by the standard warranty.

When connecting the wires ensure that the power switch is in the off position.

4. Refitting the Main Chassis

The main chassis can be refitted to the mounting bracket assembly using the following steps.

1. Align the PCB at the top rear of the main chassis with the connector located at the top of the mounting bracket assembly

2. At the same time align the two tubes at the bottom rear of the main chassis with the two tubes located on the bottom of the mounting bracket assembly.

3. Slide the chassis backwards on the mounting bracket assembly so that the PCB and connector and tubes engage simultaneously. (See diagram below).

4. Ensure the PCB, connector and tubes are fully engaged by firmly pushing the main chassis horizontally backward on the mounting bracket assembly
   (WARNING: DO NOT PUSH ON THE LCD AS THIS MAY CAUSE DAMAGE).

5. Align the two fixing screws located at the bottom of the chassis with the screw threads on the mounting bracket assembly.

6. Tighten the screws to secure the chassis to the mounting bracket assembly.

Diagram 4. Simplified Schematic

CONNECTOR   PCB

TUBES
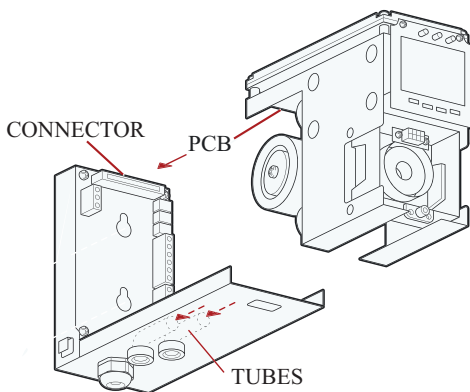
5. Installing the Sensor Cartridge

The Midas® sensor cartridge is supplied separately and needs to be fitted to the detector's main chassis. The following steps and diagrams detail the procedure for installing the sensor cartridge for the first time. This procedure is carried out with the power off and the detector cover removed.

1. Verify the part number and type of sensor cartridge is correct for your application, then remove sensor cartridge from packaging.
2. Remove cap from cartridge.
3. Add label for secondary gases (if necessary).
4. Align pins at the top of the sensor cartridge with the socket in the sensor cartridge chamber.
5. Carefully push the sensor cartridge into the sensor cartridge chamber until fully seated.
6. Lock the sensor cartridge in place using the tabs on either side of the sensor cartridge to secure the cartridge to the main chassis.
7. Switch the power switch on the terminal module to the 'on' position.
8. Reattach the detector cover by aligning the slots on either side with the locating tabs on the mounting bracket assembly.
9. Push the cover horizontally until fully seated.
10. Tighten the thumbscrew on the front panel.

Diagram 6. Installing the sensor cartridge
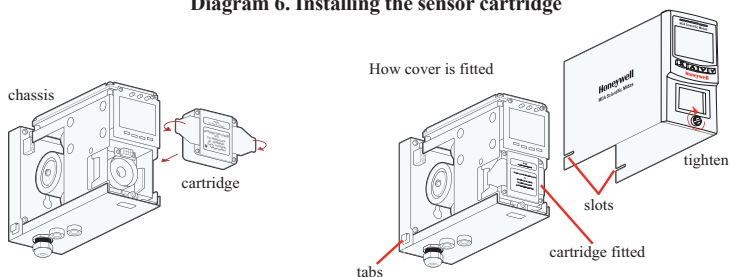
Note:

In a first-time start up, an F49 or F88 fault code may be displayed; there is no actual fault and the fault message can be cleared by depressing the 'X' button for a few seconds.

To properly activate the Midas® with a cartridge for the first time:

• When "ChAngE gAS" or "FIrSt CELL" scrolls on the display, hit the '✔' on the Midas® front panel.
• When the "reboot" completes then press and hold the "X" to clear any latched fault(s).
• Confirm that the green LED is flashing.
• Confirm that the yellow and red LEDs are off.
• Confirm the display shows a concentration of zero (as appropriate).

The cartridge has now been accepted by the Midas® as the correct type.

If the above steps were not performed at initial start-up, then remove the cartridge and cycle power. Once the Midas® has completed the "reboot" process, install the cartridge to be used and repeat the steps above.

6. Diagnostics

Fault Code	Description	Condition	Recovery
m9	Simulated Maintenance Fault	User has generated a simulated fault.	Reset simulated fault.
m10	Over range.	A large concentration has been detected. The Midas® requires an independent confirmation that the gas hazard is gone.	Supply known clean air to the Midas® and clear this fault.
m11	User calibration expired	The user specified calibration interval has elapsed.	Perform zero and span calibrations. Increase span calibration period.
m12	Cartridge expires soon.	Cartridge is old and will expire soon.	Replace the cartridge with a new cartridge.
m13	Flow low.	Midas® is no longer able to regulate flow.	Check filters and pump.
m14	Interferent present.	An interferent is degrading the ability of the Midas® to detect gas.	Check application.
m15	Temperature near limit.	Temperature within 2° Celsius of limit.	Check installation environment.
m16	Baseline fault.	Sensor baseline has drifted.	Check for background gas concentration, temperature or humidity fluctuations. Perform zero calibration. Replace cartridge.
m17	Inhibit timeout.	Transmitter has been in inhibit mode too long.	Resume monitoring or increase timeout value.
F39	Simulated Fault	User has generated a simulated fault.	Reset simulated fault.
F40	Sensor overdosed.	Sensor has been exposed to high gas concentrations for long periods.	Replace cartridge.
F41	Baseline fault.	Sensor baseline has drifted.	Check for background gas concentration, temperature or humidity fluctuations. Perform zero calibration. Replace cartridge
F42	Calibration expired.	Too long since last calibration.	Replace or calibrate the cartridge.
F43	Cartridge expired.	Cartridge is too old.	Replace cartridge.
F44	Cell failure.	Cartridge has failed Reflex™ check.	Replace cartridge.
F45	Stabilization timeout.	Cartridge has failed to stabilize.	If temperature or humidity shocks exist, precondition the cartridge. Check for background gas concentration. Replace cartridge.
F46	Cartridge analog failure.	Electronic Failure Gas concentration greater than full scale.	Replace cartridge.
F47	Cartridge memory invalid.	Checksum error.	Replace cartridge.
F48	Cartridge absent.	No communications.	Reseat cartridge. Replace cartridge.
F49	Cartridge wrong type.	Cartridge type found to be incorrect after boot-up.	Replace cartridge or press '✓' accept if correct.
F80	Temperature limits exceeded.	Temperature is outside limits	Check installation environment.
F81	Flow fail.	Flow < 70% of nominal for 15 seconds.	Check filters. Check for kinked tubing. Replace pump.
F82	Excessive electrical noise.	Internal electronics repeatedly noisy.	Check grounding of Midas® chassis. Check termination of cable shields. Relocate the Midas® further from noise sources. Add ferrite inductors to cables.

Fault Code	Description	Condition	Recovery
F83	Pyrolyzer fail.	Pyrolyzer fails to heat.	Check electrical connection to pyrolyzer. Replace pyrolyzer.
F84	Misc. transmitter fault.	Transmitter is defective.	Service or replace Midas®.
F86	Coprocessor fail	Coprocessor is damaged.	Contact Honeywell Analytics Service.
F87	Pyrolyzer temp limits exceeded	Pyrolyzer temperature exceeded.	Clean pyrolyzer cooling vents. Contact Honeywell Analytics Service.
F88	Pyrolyzer heater fail	Pyrolyzer heater failed.	Replace the pyrolyzer. Contact Honeywell Analytics Service.
F89	Pyrolyzer power unreg	Target power not achieved within specified time span.	If 24VDC power check, 21.6 < V in < 26.4 Contact Honeywell Analytics Service. Replace pyrolyzer.
F90	Pyrolyzer heater mismatch	Requires High Temperature Pyrolyzer (MIDAS-A-HTP)	Contact Honeywell Analytics Service.
F91	HTP module required	Check that MIDAS-S-CFX or MIDAS-E-CFX is installed for the high temperature pyrolyzer version	Change to HT Pyrolyzer
F92	0P3 pyrolyzer module failure	Data value: 0x0800 0P3 pyrolyzer failed to get up to temperature	Replace pyrolyzer heater
		Data value: 0x1000 0P3 pyrolyzer flow is out-of-range	Check flow connections between Midas and 0P3 pyrolyzer
		Data value: others 0P3 pyrolyzer internal failure	Contact Honeywell Analytics Service.

"Hot" and "Cool" messages are informational events that can be generated under two conditions:
1. Immediately after the detector powers up.
2. When the state changes from cool to hot or hot to cool.

"Hot" means the temperature inside the cartridge is at 40°C or above. "Cool" means the temperature inside the cartridge is below 40°C. In both cases the event data field will list the actual temperature at the time of the event.

Find out more
www.honeywellanalytics.com

Americas
Honeywell Analytics
405 Barclay Boulevard
Lincolnshire, IL 60069
Tel: +1 847 955 8200
Toll free: +1 800 538 0363
Fax: +1 847 955 8208
detectgas@honeywell.com

Europe, Middle East, and Africa
Life Safety Distribution AG(LSD)
Javastrasse 2
8604 Hegnau
Switzerland
Tel: +41 (0)44 943 4300
Fax: +41 (0)44 943 4398
gasdetection@honeywell.com

Technical Services
ha.global.service@honeywell.com
www.honeywell.com

Asia Pacific
Honeywell Analytics Asia Pacific
#508, Kolon Science Valley (1)
187-10 Guro-Dong, Guro-Gu
Seoul, 152-729
Korea
Tel: +82 (0)2 6909 0300
Fax: +82 (0)2 2025 0388
analytics.ap@honeywell.com

OFFICIAL DISTRIBUTOR
GazDetect
contact@gazdetect.com
+33 (0)1.64.09.35.16

Honeywell

MIDAS-A-020 Rev 4.0
February 2013
© 2013 Honeywell Analytics