6. SPECIFICATIONS

**Connections**
- **Inputs**: Searchpoint Optima, Searchpoint Optima Plus, Searchline Excel, Searchline Excel Cross-Duct Field wiring.
- **Outputs**: IS protected Honeywell SHC1 Handheld Interrogator communications (RS485). 4-20mA (Non-isolated).
- **Power Supply**: 18-32VDC.

**Environmental**
- **Operating temperature**: UL -25°C to 40°C (-13°F to 104°F), CSA -55°C to 40°C (-67°F to 104°F).

**Enclosure**
- **Entry Socket**: One IS protected Communications Link Entry Socket for connecting the Honeywell SHC1 Handheld Interrogator.
- **Cable/Conduit Entries**: Three 3/4" NPT entries (one each side and one in the bottom) to accept gas detector and field cabling or 3/4" conduit.
- **Size**: 212mm (8.35 in) wide x 152mm (6 in) high x 17.5mm (0.69 in) deep. Add approximately 80mm (3.15 in) to the height for the Communications Link Entry Socket.
- **Weight**: 2.8kg.
- **Material**: Aluminium.

**Ingress Protection**: IP68 to BS EN 60529, Degrees of protection provided by enclosures (IP code).

**Certification**
- **UL**: Class 1, Div. 1, Groups B, C, D.
- **CSA**: Class 1, Div. 1, Groups B, C, D.

**Digital Interface**: Use the Modbus RTU communications protocol.

**Field Wiring**: From 22-12 AWG (0.326 to 3.31 mm²), 105°C.

This section specifies UL and CSA certification information for the DX100 (M) Termination Unit. It includes relevant Control Drawings. A Honeywell Analytics certificate label is located on the right-hand side of the DX100 (M) Termination Unit. The label contains all the relevant information regarding the product's identification and certification status. The following diagram shows the UL/CSA Certification label.

The part number for the DX100 (M) Termination Unit is 2104B238.

**UL/CSA Certification Label**

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2. SAFETY

**Warnings**

1. The DX100 (M) Termination Unit is certified for and intended for use in potentially hazardous areas. Install and use the DX100 (M) Termination Unit in accordance with the latest regulations. No modifications to the unit is permitted without reference to the relevant certifying authority.

2. Install UL approved and certified equipment including field wiring in strict accordance with the articles of the National Electrical Code for Division 1 Hazardous Locations (NFPA 70).

3. Install CSA approved and certified equipment including field wiring in strict accordance with Canadian Electrical Code, Part 1.

4. For installations elsewhere, the appropriate local or national regulations should be used.

5. The Code of Practice regarding Selection, Installation, Use and Maintenance of Apparatus For the Detection of Combustible Gases (Other Than For Mining Applications Or Explosive Processing And Manufacture) must be complied with.

6. The DX100 (M) Termination Unit must be properly earthed to protect against electrical shock, minimise electrical interference and comply with ISI Safety Requirements.

7. Damaging or removal of equipment should be carried out in the safe area only.

8. Do not drill holes in the housing as this will invalidate the explosion protection.

9. In order to maintain electrical safety, the unit must not be operated in atmospheres with more than 21% oxygen.

10. Do not open the enclosure in the presence of an explosive atmosphere.

**Cautions**

Only the Handheld Interrogator (SHC1) must be connected to the Termination Unit’s communication link entry socket.

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1. INTRODUCTION

The DX100 (M) Termination Unit is an explosion proof active junction box that provides a signal connection point for the Searchpoint Optima and Searchline Excel range of gas detectors and the associated field wiring, and a mounting point for the Searchpoint Optima and Optima Plus detectors. The unit is certified to UL, and CSA standards and is intended for use in hazardous environments.

The Termination Unit also provides a digital interface between the attached gas detector and an RS485 link to the network controller.

**Note:** Gas detector digital address configuration information is not provided here but is provided in the DX100 Series Termination Unit Technical Handbook.

The DX100 (M) provides:

- Terminals for connecting the gas detector and field wiring.
- An Intrinsically Safe (IS) connection point for the Hand Held Interrogator (SHC1).
- A local mounting point for the Searchpoint Optima or Optima Plus gas detector.

The unit features three 3/4" NPT cable/conduit entries, two terminal blocks and a voltage clamp with a communications link entry socket.

When used with an Optima or Optima Plus, one of the unit's three cable/conduit entries (usually the left-hand one) is used to mount the gas detector directly to the box. The gas detector output a 4-20mA signal that is sent via the Termination Unit and field wiring back to the system controller.

The voltage clamp and the external socket provide the IS connection to the Handheld Interrogator (SHC1) which allows operator interaction with the attached gas detector to commission, calibrate or diagnose the system. Full details about the gas detectors can be found in their respective technical documents, which include operation of the SHC1.

**Caution:** Only the SHC1 Handheld Interrogator should be connected to the DX100 (M) communication link entry socket.

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**Quick Start Guide**

Honeywell Analytics Inc.
Lincolnshire, USA
Made in USA

**Termination Unit Type DX100(M)**

**PART NO.**

**2104M0703**

**CAPACITIES**

- Three 3/4 NPT entries (one each side and one in the bottom) to accept gas detector and field cabling or 3/4" conduit.
- 212mm (8.35 in) wide x 152mm (6 in) high x 17.5mm (0.69 in) deep. Add approximately 80mm (3.15 in) to the height for the Communications Link Entry Socket.
- 2.8kg
- Aluminium

**Ingress Protection**: IP68 to BS EN 60529, Degrees of protection provided by enclosures (IP code).

**Certification**

- UL Class 1, Div. 1, Groups B, C, D
- CSA Class 1, Div. 1, Groups B, C, D

**Digital Interface**: Use the Modbus RTU communications protocol.

**Field Wiring**: From 22-12 AWG (0.326 to 3.31 mm²), 105°C.
This section shows the main features of the Termination Unit and also details important dimensions for the unit when installing.

3. MAIN FEATURES

It is important before starting these procedures that the detailed information provided in the DX100 Series Termination Units Technical Handbook and all the relevant instructions be followed during any of the installation procedures.

4. INSTALLATION

General Installation Guidelines
1. Read the Warnings and Cautions at the beginning of this document and all the relevant instructions before starting any of the installation procedures.
2. Identify external cable requirements and the necessary cable entry ports to be used on the Termination Unit.
3. Refer to the documentation for the associated control system for details about external network connection information, field wiring, interconnections, etc.
4. Refer to the relevant handbooks for details about the gas detectors.
5. Isolate all associated power supplies and ensure that they remain OFF during the procedures.

MECHANICAL INSTALLATION PROCEDURES

Mechanical Installation Guidelines
1. Identify a suitable location where the Termination Unit can be mounted. The Termination Unit cable entries should be fitted to all surface.
2. When fitting a Termination Unit consideration should be made regarding the probability of mechanical impacts and interference from other equipment and apparatus.
3. Mounting plates for the Searchline Excel gas detectors, and to which the DX100 (M) unit is attached, have fixing holes that are unthreaded. Unit and gas detector system component mounting holes are threaded. For the identity of other plate holes refer to the Searchline Excel Technical Handbook.

With Searchpoint Optima
The diagrams describe how the DX100 (M) is installed at the mounting location and then the Optima gas detector is fitted to the Termination Unit.
1. Securely fit the Termination Unit at the required monitoring point.
2. Use the two Terminal Unit mounting lugs. Ensure the communications link entry socket connector is located at the bottom. This fulfills the requirement to position the Optima sensor axially so that the risk of fouling the gas detector's optical surfaces is reduced.

With Searchline Excel Open-Path
1. Fit the Excel receiver's mounting plate to the bottom left entry as necessary.
2. Use the lugs on the lid unscrew it anticlockwise from the Termination Unit base.
3. Attach the two cables from the Searchline Excel Cross-Duct gas detector to the Termination Unit.
4. Fit approved certified 3/4 NPT cable glands or conduit fittings to the Termination Unit cable/conduit entries as necessary.
5. Fit the external field wiring through the cable/conduit fitting and secure.
6. Terminate the gas detector and field wiring. Refer to Electrical Installation.

ELECTRICAL INSTALLATION

Electrical Installation Guidelines
1. Isolate all associated power supplies and ensure that they remain OFF during the procedures. Ensure a gas-free atmosphere.
2. Ensure that approved and certified cable glands have been fitted to the Termination Unit cable entries where used for field wiring, with sealing washers where necessary to maintain the ingress protection rating.
3. Ensure that any cable glands/cable lock nuts are fitted before terminating the cables.
4. Make sure that a conduit sealing fitting is installed within 460mm (18in.) of the Termination Unit on all conduit runs. The following diagram shows a vertical conduit seal fitted in the conduit runs to the Termination Unit fixed with an Optima unit: Open-Path and Cross-Duct installations should be similar.
5. Ensure that approved and certified blanking plugs are fitted to all unused Termination Unit cable entries.
6. The Termination Unit mounting plate must be bonded to a protective earth.
7. Suitable cromes and ferrules must be fitted when connecting more than one wire to a Termination Unit terminal.
8. The field terminals of the Termination Unit accepts single or multi-stranded wire from 22-12 AWG (2.5-1.5mm²) to 10G. Cables should be routed carefully to avoid physical and environmental hazards such as mechanical stress and high temperatures.
9. In order to ensure correct operation and to meet requirements for RFI and EMC, it is recommended that all field cables are screened with the cable screen connected at one end only (see the Technical Handbook).