

UL:

Class I, Division 1, Groups B, C, D

OP. TEMP CODE: T4 (Tamb -40 to +80°C)
T5 (Tamb -40 to +55°C)

CSA:

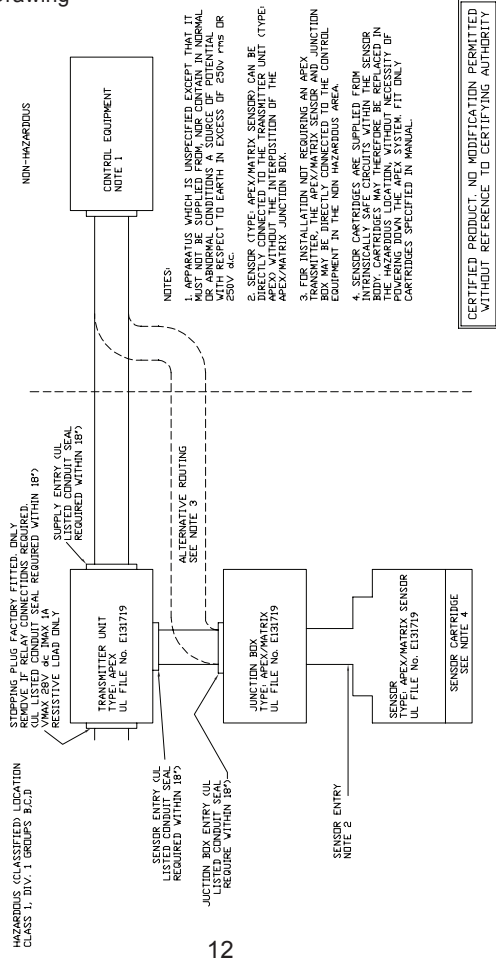
Class I, Division 1, Groups B, C, D

OP. TEMP CODE: T4 (Tamb -40 to +75°C)
T5 (Tamb -40 to +55°C)

Caution: The Certified Junction Box must not be used with CSACertified Sensors fitted with combustible cartridges.

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UL Control Drawing



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1. INTRODUCTION

The Certified Junction Box is designed for use in hazardous areas to provide amounting point for a Certified Sensor that is located remotely from a Transmitter Unit (Apex for a hazardous location or Opus/Lifeline II for a non-hazardous location). See CSA Control Drawing for special conditions of installations.

This guide provides the information necessary to mechanically install a Certified Junction Box, fit a Certified Sensor to it, and make the necessary electrical connections.

For details about the Certified Sensor see its Quick Start Guide or the Apex Technical Handbook.

Proper consideration must be made when siting the Certified Junction Box to ensure trouble free operation throughout its life.

This guide assumes that consideration of the location and mounting of the gas detection system has previously been taken into account in accordance with the guidelines in the Apex Technical Handbook.

Associated Documentation

Apex Quick Start Guide, MAN0601	Part No. 2110M8000
Opus Quick Start Guide, MAN0600	Part No. 2110M8001
Lifeline II Quick Start Guide	Part No. 1998-0344
Certified Sensor Quick Start Guide, MAN0598	Part No. 2110M8005
APEX Technical Handbook, MAN0604	Part No. 2110M8030
Cartridge Quick Start Guide, MAN0620	Part No. 2110M8015

Refer to the relevant control system manual for connection information.

If information outside the scope of these instructions is required please contact Honeywell Analytics.

The types of information notices used throughout this document are as follows:

WARNINGS
Indicates hazardous or unsafe practice which could result in severe injury or death to personnel.

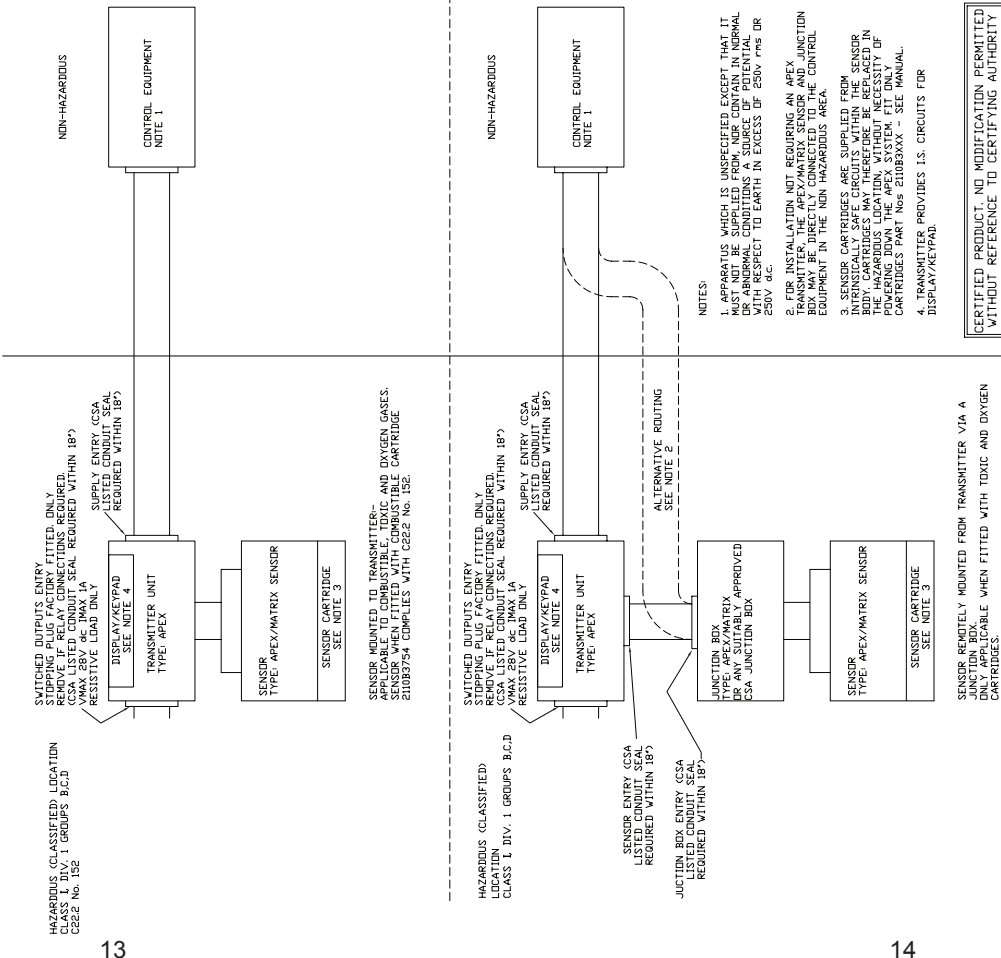
Caution: Indicates hazardous or unsafe practice which could result in minor injury to personnel, or product or property damage.

Note Provides useful/helpful/additional information.

Honeywell Analytics reserve the right to change or revise the information supplied in this document without notice and without obligation to notify any person or organisation of such revision or change.

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CSA Control Drawing



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2. SAFETY

WARNINGS

- This equipment is certified for and intended for use in potentially hazardous areas. Install and use the equipment in accordance with current local and national regulations.
- Refer to the control drawings included in this document when installing the certified components.
- Operators should be fully aware of the action to be taken if the gas concentration exceeds the alarm level.
- Do not modify or alter the construction of the unit as essential safety and certification requirements may be invalidated.
- The equipment is not suitable for use in oxygen enriched atmospheres (>21%V/V). Oxygen deficient atmospheres (<10% V/V) may suppress some sensor outputs.
- The equipment is intended for use at atmospheric pressure only and should not be used in pressures exceeding 1.1 bar.
- When installed to measure flammable gas it is essential that overrange latching is enabled either locally at the associated Transmitter Unit or remotely in the control network. Depletion of oxygen as a consequence of displacement by flammable gas can result in the gas reading returning to zero.
- Change Certified Sensor gas cartridges using the procedure described in the Cartridge Quick Start Guide. Failure to correctly follow the procedure could result in the wrong cartridge being installed, and possibly non-detection of events. Alternatively, extraneous alarms could be triggered by chemicals detected but not of concern at a particular location.
- Sensor cartridges may contain corrosive solutions. Dispose of in accordance with local and national regulations.
- During usage, as some gases may be hazardous, outlets from accessories fitted to the Certified Sensor, etc., e.g. Flow Housing, should exhaust to a safe area.

CAUTIONS

- Installation should consider not only optimum siting for gas detection related to potential leak points, gas characteristics and ventilation but also placement where the potential for mechanical damage is minimised or avoided.
- During installation/maintenance only use the supplied parts. Replacement with alternatives will invalidate certification.
- Only cartridges with the following part numbers can be fitted to the Certified Sensor: 2110B30x0, 31x0, 32x0, 33x0, 34x0 series and 2110B3700 - 2110B3999 range. Note: For remote CSA Certified Sensor installations combustible cartridges in the range of part numbers 2110B3700 to 2110B3799 **MUST NOT BE FITTED**.
- Do not use the unit where the temperature is lower than -40°C (-40°F) or higher than +65°C (149°F).
- Dispose of in accordance with local disposal regulations. Materials used: Stainless Steel.

Find out more

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Please Note:

While every effort has been made to ensure accuracy in this publication, no responsibility can be accepted for errors or omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards, and guidelines. This publication is not intended to form the basis of a contract.

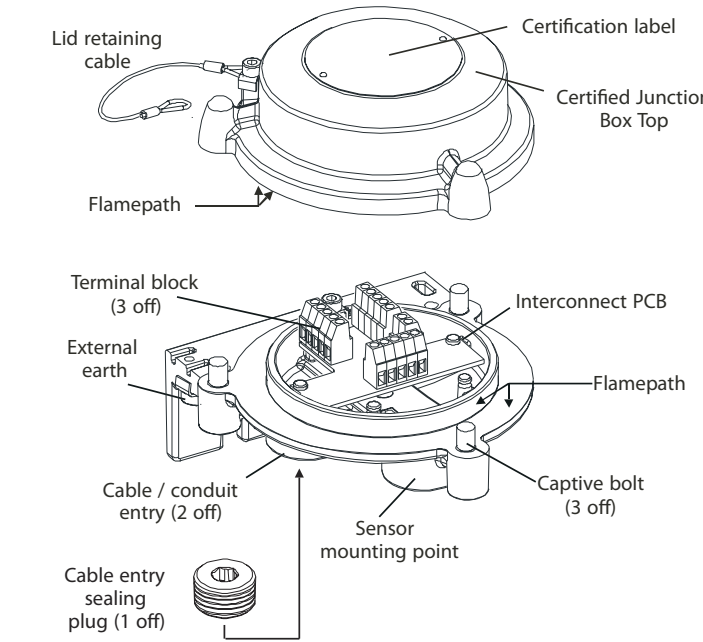
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3. INSTALLATION

For optimum performance the Certified Junction Box should be installed in a location free from dust and direct sunlight (see CSA Control Drawing for special conditions of installations). Additional sunshade and weather protection accessories are available for Certified Sensors in harsh environments. Locations near antennae of high power radios, radar and satellites are not recommended.

Environments subject to excessive mechanical vibrations are not recommended. The installation procedure is divided into mechanical installation and electrical installation. The unit needs to be mounted to a supporting structure before electrical connections are made.

The diagram shows the main component parts of the unit.



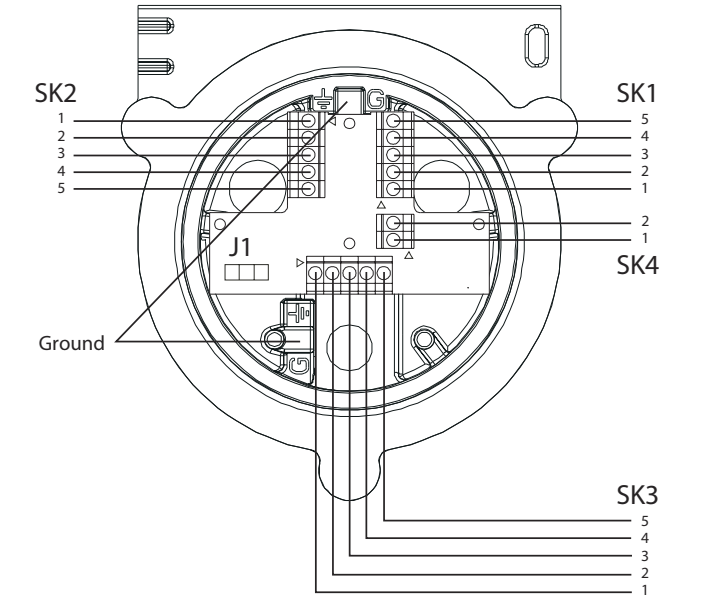
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4. WIRING

The following information details the wiring for the unit.

Note: Isolate all associated power supplies and ensure that they remain **OFF** when wiring the unit.

Connect the junction box, sensor and field wiring as shown in the following diagram and the accompanying table.



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INSTALLATION

The Certified Junction Box complies with the EMC requirements of EN 50270. In order to maintain compliance with EN50270 it is essential that the unit is installed correctly as detailed below. It is the responsibility of the installation design authority to ensure that the electrical installation meets appropriate standards.

1. The unit case should not be electrically connected to electrically noisy(dirty) metalwork or conductors. The case should be connected to a low noise (clean) earth line.
2. The entire length of the field cabling connected to each unit should be fully screened with the screen or conduit connected to a low noise earth.
3. The low noise earth line should only be connected to safety earth at a single point. Star earthing arrangements minimise earth current crosstalk. Field cabling shields should not be connected such that earth loops are produced.
4. The earth bonding arrangement must ensure that the maximum peak voltage between the unit case earth and any field cable conductor is less than 350V.
5. The use of a single, screening cable for each gas detector ensures maximum screening and minimum crosstalk. Cabling arrangements which use a single cable for connecting field devices compromise screening, increase the potential for crosstalk and prevent implementation of true star earthing.

CERTIFIED JUNCTION BOX DIMENSIONS

Width:	5.50in. (140mm)
Height:	3.75in. (95mm)
Depth:	6.00in. (150mm)
Height with sensor:	8.50in. (215mm)
	9.00in. (230mm) with O2 gas cartridge fitted

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WIRING

Surplus wire length can be located about the base of the Interconnect PCB. Ensure that the cable is not trapped by the top when fitted.

Terminal/Number		Function	Colour
SK1	1	CAN_L	White
SK2	2	CAN_H	Green or Blue
SK3	3	+V	Red
	4	0V	Black
	5	Not used	-
SK4	1	Screen *	-
	2	Screen *	-
G	-	Earth	Green/Yellow

*Only connect cable screens to these terminals if they are isolated at the remote end.

5. CONFIGURATION

The following specifies the Certified Junction Box configuration options.

CAN TERMINATION LINK - J1

- ☒ Terminated
- ☐ Underterminated (default)

Note: Leave the link in the **Underterminated** position.

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INSTALLATION

INSTALLATION PROCEDURE

Caution: Ensure that the junction box flamepath is not damaged during this procedure. The flamepath is formed by the mating surfaces of the Certified Junction Box top and base (see diagrams).

1. Isolate all associated power supplies and ensure that they remain OFF during the installation procedure.
2. Attach the junction box to the supporting structure.
Drill two mounting holes 2.68in. (68mm) apart and use the unit's mounting slots in the base with either of the following fixings:
 - Two M10 bolts.
 - A single 10mm (0.4in.) U-bolt.
3. Remove the Certified Junction Box lid.

Unscrew the three captive M8 bolts. The lid is retained by a metal retaining cable attached to the base.

4. Fit and connect the field wiring.

See Section 4 for wiring details. Use either:

Conduit - using one or both of the 3/4 NPT conduit entries. Ensure that a conduit sealing fitting is placed within 18in. of the enclosure on all conduit runs.

Cable - using any suitable flameproof cable entry device certified as Equipment to Directive 94/9/EC (ATEX).

Notes:

1. All unused cable/conduit entries must be sealed with a certified sealing plug (one plug is supplied fitted).
2. For a multi-sensor system using a network loop, both cable/conduit entries are used, one bringing the loop connections in and the other taking them out of the box. Remove the fitted certified sealing plug from the cable/conduit entry.

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7. EC DECLARATION OF CONFORMITY

Honeywell

EC Declaration of Conformity

The undersigned of:

Honeywell Analytics Limited
4 Stinsford Road
Poole
Dorset
BH17 0RZ
United Kingdom

Declares that the product listed below:

APEX Junction Box

The Apex Junction Box is part of the Apex fixed gas detector which is used to monitor areas where flammable, toxic or oxygen deficient atmospheres may pose a hazard to the working environment.

Conforms to the provisions of the following European Directive(s), when installed, operated, serviced and maintained in accordance with the installation/operating instructions contained in the product documentation:

2004/108/EC EMC Directive
94/9/EC ATEX Directive – Equipment for use in Potentially Explosive Atmospheres

The standards and/or technical specifications referenced below have been applied or considered:

Harmonised Standard	Description
EN 50270:2006	Electromagnetic compatibility. Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen
EN 60079-0:2006	Electrical apparatus for explosive gas atmospheres. General requirements
EN 60079-1:2007	Explosive atmospheres. Equipment protection by flameproof enclosures "d"
EN 61241-1:2004	Electrical apparatus for use in the presence of combustible dust. Protection by enclosures "D"

Notified Body for ATEX

Baseefa Ltd
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ

Certificate Number
Baseefa08ATEX0253X

Quality Assurance Notification Number
Baseefa ATEX 0061

Type Approval
II 2 GD Ex d IIC Ex ID A21 IP67
T100°C (T_{amb} -40°C to +55°C), or T135°C (T_{amb} -40°C to +80°C)

Notified Body Number: 1180

Year of CE Marking: 2001

Signature: Richard King
Name: Richard King
Authorised Signatory
Date: 21st September 2012
Declaration Number: 2004Y0020_02/A03835
Declaration of Conformity in accordance with EN ISO/IEC 17050-1:2010

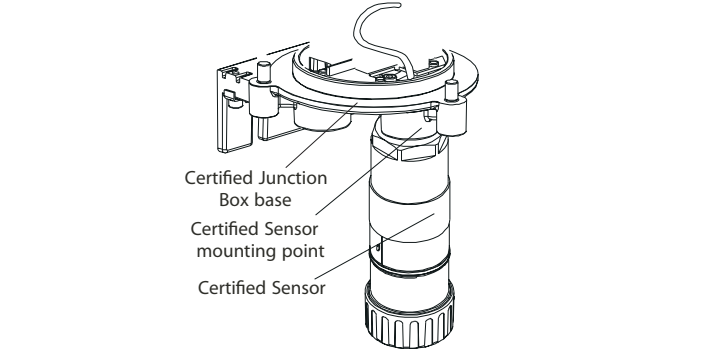
Registered Office: Honeywell House, Arlington Business Park, Bracknell, Berkshire RG12 1EB
Registered in England No. 418070

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INSTALLATION

5. Fit the Certified Sensor.

Pass the sensor connecting cable through the sensor mounting point and then screw the sensor firmly into the sensor mounting point.



6. Connect the sensor wiring.

See Section 4 for wiring and termination link details.

7. Refit the Certified Junction Box top to the to the base.

Cautions:

1. Ensure that there is no moisture inside the Certified Junction Box before fitting the lid.
2. Use only the captive bolts supplied, replacement with alternative bolts will invalidate certification.

The top should be carefully located and then lowered onto the base. Ensure that the lid retaining cable and/or wiring are not trapped and the O-ring in the top is correctly located. Check that there is no discernible gap between the top and the base. Tighten the captive M8 bolts to 5Nm(3.68 foot-pounds).

8. Fit a gas cartridge to the Certified Sensor.

To install the gas cartridge refer to the Cartridge Quick Start Guide supplied with the cartridge.

9. Check for correct operation of the system by carrying out the procedures described in Section 4.

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6. CERTIFICATION

The Certified Junction Box is designed and approved for use in hazardous areas.

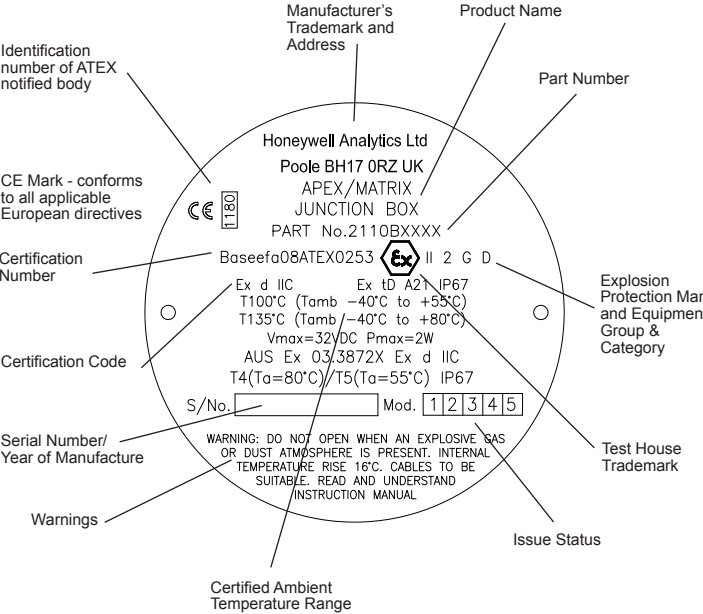
There are two Certified Junction Box types:

ATEX: Part No: 2110B2100

UL/CSA: Part No: 2110B2103

A certification label is located on top of the Certified Junction Box. The label contains all the relevant information regarding the product's identification and certification state.

ATEX Label



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