18. Support the top.

Ensure that it is supported whilst the next step is carried out.

19. Reconnect the ribbon cable into the ZIF connector on the Interconnect PCB in the base of the Transmitter Unit.

Follow the reverse of the removal procedure ensuring that the ribbon is not twisted and is correctly centred relative to the connector before insertion. Make sure that the ribbon cable contacts face in the same direction as the arrow on the following diagram. Push the latch on the ZIF connector down until it is fully engaged.

20. Refit the top to the Transmitter Unit

Cautions:

1. Ensure that there is no moisture inside the unit before fitting the top.

2. Use only the supplied bolts, replacement with alternative bolts will invalidate certification.

The top should be located using the locating pins on the Apex base and then lowered onto the base. Ensure no wires are trapped and the O-ring in the top is correctly located.

Tighten the captive M8 bolts to 5Nm (3.68 foot-pounds).

21. Refit the retaining cable between the Transmitter Unit top and base.

Tighten the M6 screw to 3Nm (2.21 foot-pounds)

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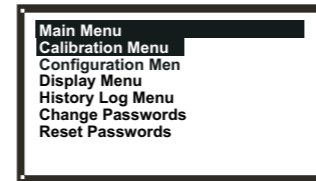

After installing the communications board and connecting the digital network wiring it is necessary to check that the Apex Transmitter Unit, Certified Sensor and digital communication board are working correctly together and also carry out a basic configuration procedure.

1. Power-up the Transmitter Unit.

2. Check that the Transmitter Unit completes its start-up sequence successfully.

The Gas Reading should be displayed. Refer to the Apex Quick Start Guide if an error message is displayed.

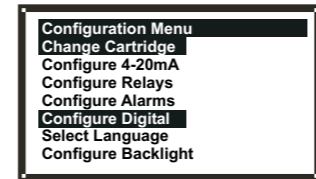**3. Press the esc button on the front of the panel.**

*The **Main Menu** is displayed.*

```
Main Menu
Calibration Menu
Configuration Men
Display Menu
History Log Menu
Change Passwords
Reset Passwords
```

4. Select (highlight) the Configuration Menu option.

*Use the **up/down** keys.*

5. Press the ok button.

6. Enter the current Level 2 password.

*The **Configuration Menu** is displayed.*

```
Configuration Menu
Change Cartridge
Configure 4-20mA
Configure Relays
Configure Alarms
Configure Digital
Select Language
Configure Backlight
```
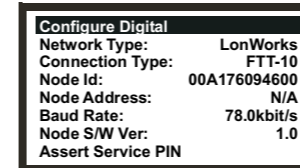
---

7. Select (highlight) the Configure Digital option.

8. Press the ok button.

*Use the **up/down** keys.*

*The **Configure Digital** menu is shown displaying information similar to the following.*

```
Configure Digital
Network Type:        LonWorks
Connection Type:       FTT-10
Node Id:        00A176094600
Node Address:             N/A
Baud Rate:         78.0kbit/s
Node S/W Ver:            1.0
Assert Service PIN
```

For a full explanation of the information see section 5.

9. Select the Assert Service PIN option.

10. Press the ok button.

This registers the node's existence with the network controller.

*The display automatically returns to the **Configuration Menu**.*

11. Press the esc button twice.

This returns to the Gas Reading display via the Main Menu.

After the board is fitted, the unit powered and the LonWorks network is live, the Apex Transmitter Unit becomes a node on that network.

The **Configure Digital** menu screen provides the following details about the communications system:

- The network type in use - LonWorks.
- The type of board network connection protocol in use e.g. LonWorks FTT-10.
- The unique identifier of the communications board.
- The address of the node on the network - this is not applicable to the LonWorks network.
- The baud rate - fixed for LonWorks at 78.0kbits/sec.
- The version of software stored on the communications board.

Note: These details cannot be changed, they are for information only.

Quick Start Guide   **Honeywell**

**Lonworks Digital
Communications Board
Apex Installation**

CONTENTS

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1. INTRODUCTION

The LonWorks Digital Communications Board extends the communication capability of the Apex Transmitter Unit by allowing its incorporation into a digital gas detection loop (LonWorks network).

Caution: The digital communications board is not suitable for a UL certified Apex Transmitter Unit.

This guide provides the information necessary to mechanically and electrically install the board into an Apex Transmitter Unit. It also tells how to then register the unit on the digital network and confirm that the board is working correctly.

Note: This guide only covers installing the board into an Apex Transmitter Unit. To fit the board into an Opus Transmitter Unit use the following document:

LonWorks Digital Communications Board - Opus Installation, MAN0609, Part No: 2110M8016.

This guide must be read in conjunction with the associated Transmitter Unit and Certified Sensor Quick Start Guides as it refers throughout the procedures to access, wiring, etc. details that are fully covered by those documents.

For comprehensive technical details about the communication board and the Apex Transmitter Unit refer to the associated Technical Handbooks, which contain the full safety, installation, commissioning, maintenance and fault finding instructions.

Associated Documentation:

Digial Communications Technical Handbook, MAN0612
Part No.: 2110M8032

Certified Sensor Quick Start Guide, MAN0598
Part No.: 2110M8005

Apex Technical Handbook, MAN0604
Part No.: 2110M8030

Lonworks, ANSI / EIA 709.1-A-1999

Refer to the relevant control system manual for connection information (field wiring, etc.)

Should you require information outside the scope of this guide please contact Honeywell Analytics.

WARNINGS

Fitting the communications board involves accessing the interior of the Apex Transmitter Unit.

It is therefore **important** that all **Warning** and **Caution** notices applying to the Transmitter Unit and Certified Sensor are understood.

Also the safety and environmental precautions for the Transmitter Unit and Certified Sensor are understood.

Also the safety and environmental precautions for the Transmitter Unit and Certified Sensor must be followed (see the Apex and Certified Sensor Quick Start Guides and the Apex Technical Handbook).

CAUTIONS

Observe precautions for handling electrostatic discharge sensitive devices.

The LonWorks Digital Communications Board can be installed by a single person. The following points should be noted before installation is carried out.

- Read through all these instructions before starting any of the installation procedures.
- Identify external field digital cable requirements and the necessary cable entry ports to be used on the Apex Transmitter Unit.
- Fitting the board should be carried out by a qualified technician.

Electrical interconnections for the communications board are made at the same time as mechanical installation by means of plugs attached to the communications board. These plugs mate with existing sockets on the main PCB fitted in the Apex Transmitter Unit top.

Once the board is fitted any external LonWorks network wiring required is connected.

3.1 CHECKING THE COMPONENTS

Before fitting the board check that you have the LonWorks Digital Interface Card with 4 mounting pillars (11.1mm stand-off)

The following diagram identifies the main parts of the board.

Plug (2 off) — LonWorks board — Mounting pillar (4 off) — Earth lead
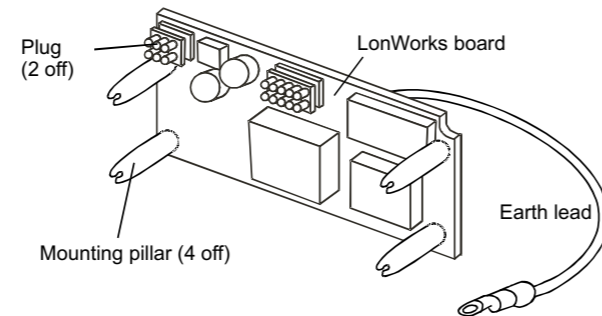
Note: The board is supplied with the mounting pillars fitted to it.

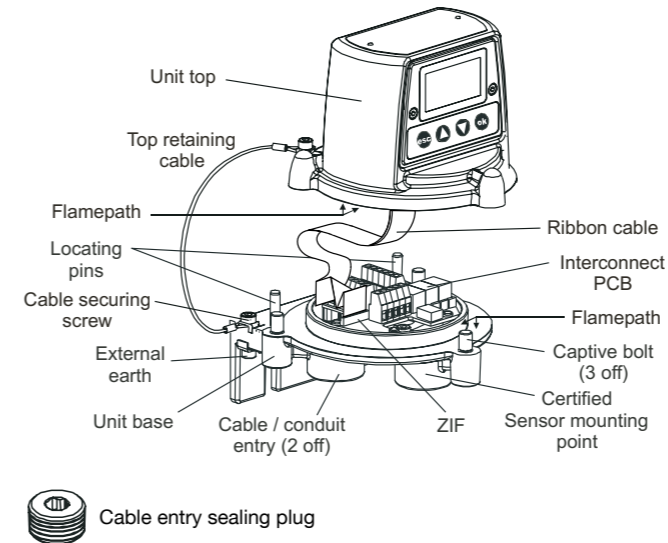### 3.2 FITTING THE BOARD

Cautions:

1. Observe precautions for handling electrostatic discharge sensitive devices.

2. Ensure that the Apex Transmitter Unit flamepath is not damaged during this procedure.

1. **Isolate all associated power supplies and ensure that they remain OFF during this procedure. Ensure a gas free atmosphere.**

Unit top — Top retaining cable — Flamepath — Locating pins — Cable securing screw — External earth — Unit base — Cable / conduit entry (2 off) — ZIF — Ribbon cable — Interconnect PCB — Flamepath — Captive bolt (3 off) — Certified Sensor mounting point

Cable entry sealing plug

---

2. **Disconnect the cable retaining the Transmitter Unit top to the base.**

   Unscrew and remove the single hexagon screw that secures the cable to the base.

3. **Detach the top of the Transmitter Unit.**

   Unscrew the three captive M8 bolts underneath the base. Lift the top clear of the locating pins. Take care not to damage or strain the ribbon cable connecting the top and the base.

   Support the top and ensure that it is supported whilst the next step is carried out.

4. **Unlatch the ribbon cable Zero Insertion Force (ZIF) connector on the Interconnect PCB.**

   Grip the ends of the ZIF and pull it vertically upwards until it is felt to stop and the ribbon cable is loose.

5. **Pull the ribbon clear**

   Remove the top and take to a workshop area.

6. **Place the top with the certificate face down on a flat surface.**

   *This provides access to the components inside the top.*

Main PCB Potted assembly — Ribbon cable — PCB baffle — PCB baffle securing screw (2 off)

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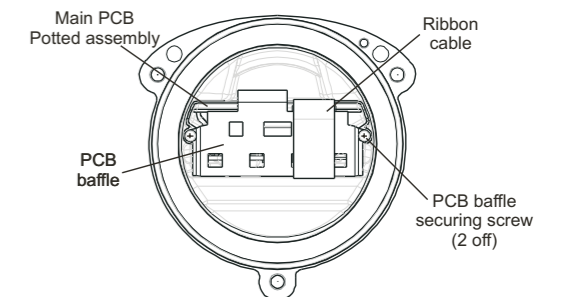
7. **Remove the PCB Baffle from the Transmitter Unit top.**

   Unscrew and remove the two PCB Baffle securing screws.

8. **Disconnect the flying lead plug and socket connecting the Main PCB Potted assembly to the top.**

9. **Slide the Main PCB Potted assembly out of the Apex Transmitter Unit top.**

Main PCB — Flying lead — Main PCB Potted assembly
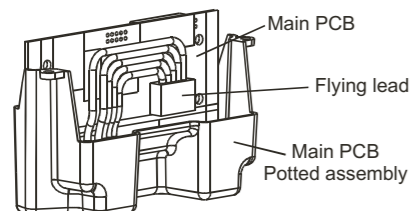
10. **Place the Main PCB Potted assembly on a flat surface with the flying lead and plug on top.**

11. **Remove the LonWorks communication board from its antistatic bag.**

12. **Position the communication board over the Main PCB.**

    Ensure the mounting pillars point downwards. Check that the two plugs on the communications board are correctly aligned with the sockets on the main PCB and the mounting pillars are aligned with their mounting holes.

13. **Carefully press the communication board down evenly onto the Main PCB.**

    Ensure the pillars locate in their mounting holes and the electrical plugs are fully home.

Flying lead — Hole for communication board mounting pillar — Ribbon cable — Main PCB — Sockets — Potted assembly
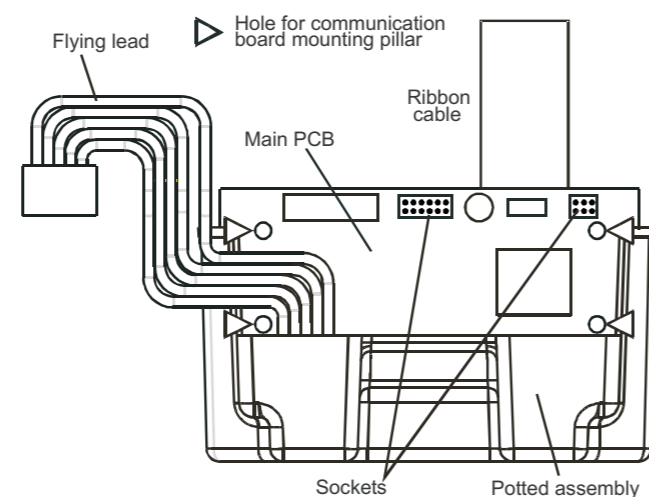
14. **Reconnect the flying lead plug and socket connecting the Main PCB to the top.**

15. **Refit the Main PCB Potted assembly with communications board into the top.**

    Reverse the removal procedure. The assembly should be fitted so that the communications board is on the same side as the LCD display with the ribbon cable at the top.
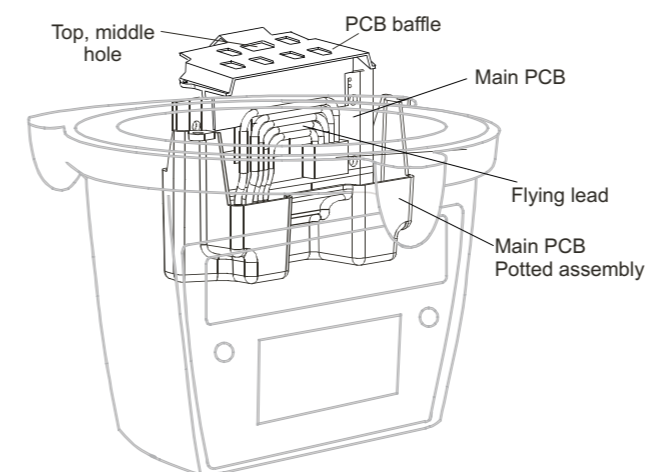
16. **Refit the PCB Baffle.**

Caution: When refitting the parts into the top take care not to damage the flying lead plug assembly wires.

   Ensure that the vertical part of the baffle goes between the Main PCB and the flying lead (see diagram).

Top, middle hole — PCB baffle — Main PCB — Flying lead — Main PCB Potted assembly

   Push the communication board earth lead through the top middle hole in the baffle.

   Secure the earth lead under one of the two baffle securing screws. Tighten the screws to 1.0Nm (0.74 foot-pounds).

17. **Fit and connect the communication network field wiring to SK4 in the base of the Transmitter Unit.**

    Refer to the table and diagram for wiring details. Use either:
    Conduit *- using one or both of the ¾ NPT cable entries. Ensure that a conduit sealing fitting is placed within 18" of the enclosure on conduit runs.*

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

Note: All unused cable entries must be sealed with a suitable certified sealing plug (one plug is supplied with the Apex Transmitter Unit).
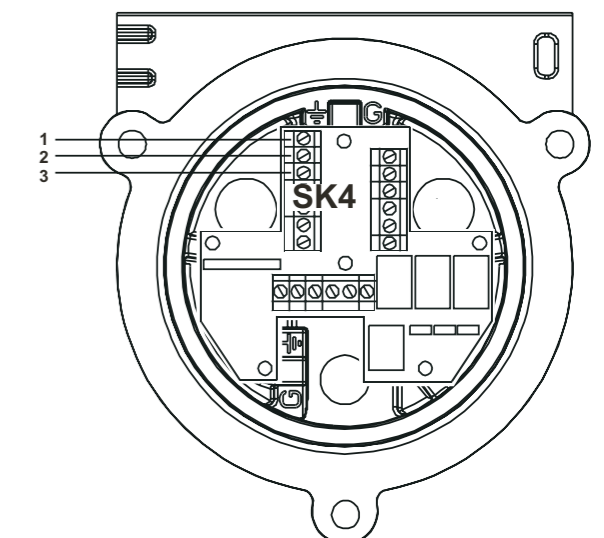

Terminal number		Function	Min. length of cable from entry point
SK4 (Comms & Power)	1	NET1	60mm
	2	NET2	60mm
	3	Ground	60mm

Notes:

1. Marked terminal numbers only used to cross-refer to table.

2. The unit terminations that need to be wired depend on the overall system wiring.

1 2 3 — SK4

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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