

IRmax & IREX accessories

Accessories for IR products



Installation, operating and maintenance instructions

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1. The IRmax & IREX family

Crowcon IR detectors protect facilities against flammable gas hazards.

This manual contains instructions for the use of the following accessories for the **IRmax**:

Part Numbers	Name	Description
S012152	Sun shade/collector cone	Can be fitted to IRmax to protect against elevated temperatures due to direct sunlight and/or to extend the detector's footprint for detecting lighter than air gases (e.g. methane).
S012169	Duct mounting kit	Enables monitoring of ducts from 300 mm to 3000 mm, and air-flow between 2 m/s and 20 m/s.
S012827 IRmax S012828 IREX	PC communications kit	Communications module, software and lead to enable configuration of the detector.
M20: S012295 ½" NPT: S012296	Auxiliary junction box	Provides space for connecting field cables, and must be used where RS232 Modbus enabled versions of IRmax are to be used and multi-dropped in addressable networks.
M20 ATEX S012147 ½" NPT ATEX S012190	Spigot gland	Allows IRmax or IREX to be fitted directly to junction boxes with either M20 or ½" NPT cable entries.

Other accessories available for the **IRmax** or **IREX**:

Part Numbers	Name	Description
M041007	Calibration cap	Fits over the standard weathercap to enable calibration where local air speed exceeds 2 metres per second.
S012130	Mounting bracket kit	Enables mounting to a wall or 2" (50 mm) pipe. Not required if the detector is being fitted to an existing junction box.
S012996	Flow adaptor	For gas sampling applications.
C011210	Mirror cleaning kit	Contains IPA impregnated wipes and microfibre cloth.
C011206	Mirror replacement kit	

2. Sunshade for IRmax or IREX

The Sunshade should be installed to protect the detector from getting too hot due to exposure to strong direct sunlight and/or extend the footprint of the detector for lighter than air gases.

2.1 Kit contents

Sunshade, bracket and four screws.

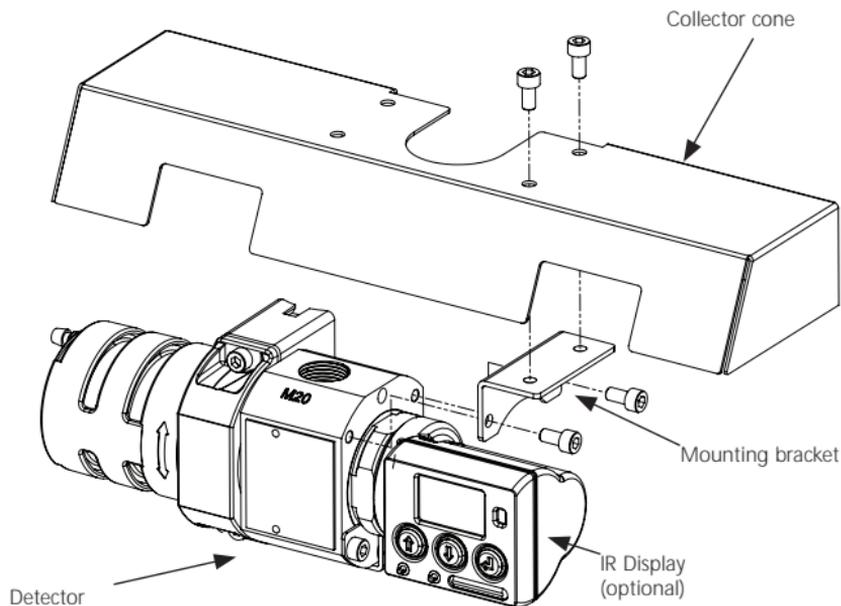


Diagram 1

Use the screws supplied to fix the bracket to the body of the detector. Attach the sunshade to the bracket using remaining screws. The sunshade may be fitted to **IRmax** supplied with or without an **IR Display** module.

2.2 Specifications

Material: Stainless steel 304-2B

3. Duct mounting kit

The duct mounting kit is designed to be used with the **IREX** and **IRmax** for monitoring potentially hazardous gases within ventilation ducts.

The air flow rate within the duct must be between 0.5 metres and 20 metres per second.

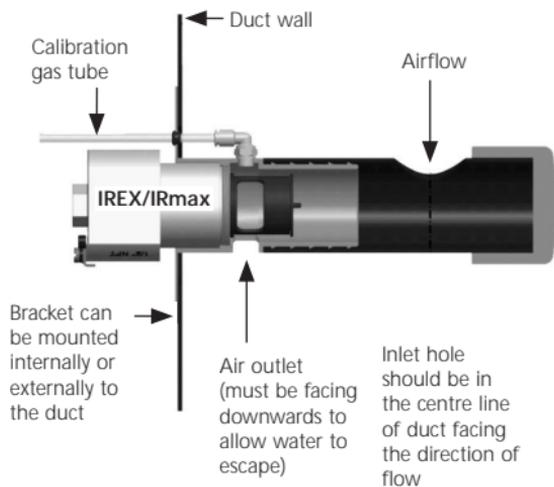
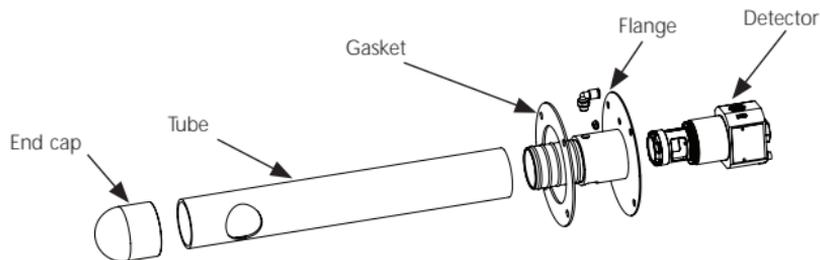


Diagram 2

3.1 Installation

1. A standard 1m length of sampling tube is supplied. Cut the open end so the tube is the correct length: the gas entry window is half way across the duct.
2. To avoid the adverse effects of turbulence, the duct mounting kit should be installed in the centre of a straight section of duct which has a length at least six times its width. If the section of duct is shorter, the adequacy of the flow should be tested with a mix of gas and air in the duct.
3. Check the air flow direction in the air duct system.
4. Use the duct mount boss to mark up the duct ready for drilling the required holes as indicated on Diagram 4. Make sure that the centre line is positioned equidistant from the two edges of the duct.

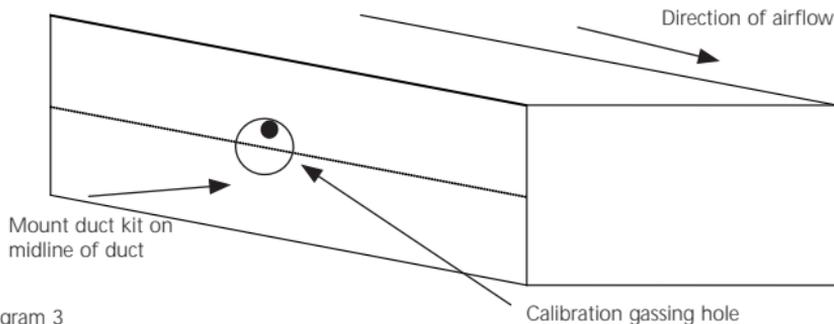


Diagram 3

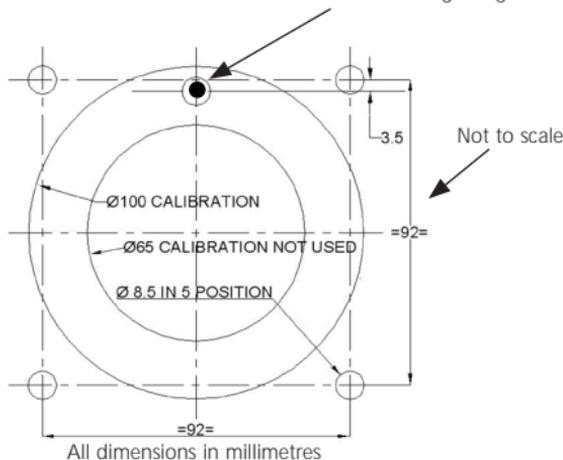


Diagram 4

5. Check that the midline hole indicated corresponds to the direction of the flow in the air duct.
6. Using a centre punch, mark the six centres indicated (Diagram 4 on page 4). At each corner, there needs to be a hole for a screw. In the centre, the hole needs to be big enough to accommodate the duct boss. If remote calibration is required, there has to be an extra hole at the top as shown on Diagram 3 and Diagram 4 on page 4.
7. Remove burrs and sharp edges around the six holes.
8. The next step is to attach the duct tube to the duct mount boss. This has to be done in such a way that the inlet to the pipe faces the airflow, while the air outlet faces downwards for drainage, and the calibration gassing hole is vertically above the main ring. This is to ensure that the drain hole of the plate is below the pipe. Plan this carefully to ensure the orientation will be correct.
9. Fit the nuts provided and tighten.
10. Secure the casting to the duct using suitable bolts.
11. Remove and discard the detector's weatherproof cover to reveal a suitable thread for attaching the **IRmax** to the duct boss. Install the **IREX** or **IRmax** by screwing it into the duct boss (about 3 turns).
12. Connect the cable as instructed in the installation, operating, and maintenance instruction manual supplied with the detector.
13. CHECK THAT THERE IS NO AIR LEAKAGE INTO THE SAMPLING CHAMBER FROM OUTSIDE THE DUCT, THROUGH THE PROBE JOINTS, CABLE GLANDS OR COVER GASKET. USE PTFE ON THE **IREX/IRMAX** THREAD IF REQUIRED.

3.2 Testing and commissioning

Calibrate the detector according to its instructions. Test the operation of the duct probe by introducing a gas and air mix into the duct. This step is particularly important if the length of the section of duct is less than six times its width.

WARNING: It is essential to ensure that procedures are in place to prevent people and/or equipment being affected by any test gas introduced into the ventilation system.

3.3 Specifications

Air speeds	0.5 m (1.6 ft)/s to 20m (65.6 ft)/s
Operating temperature range	0°C to 60°C

4. Auxiliary junction box

An **IRmax** or **IREX** gas detector can be installed using an auxiliary junction box. Cast from 316 stainless steel and available with two M20 or ½" NPT cable entries, the auxiliary junction box is ATEX and IECEx certified for use in zone 1 or 2 hazardous areas.

The auxiliary junction box provides ample space for connecting field cables - see the dimensioned drawing (Diagram 6 on page 7), and must be used where RS485 Modbus enabled versions of **IRmax** are to be used and multi-dropped in addressable networks.

A **Crowcon** spigot gland must be used to connect the detector to the auxiliary junction box.

Unused cable entries on the auxiliary junction box must be sealed using a certified blanking gland.

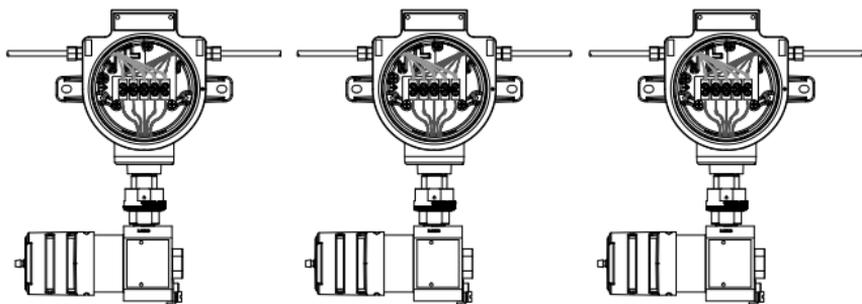


Diagram 5

If the **IRmax** are to be multi-dropped into an addressable network, RS485 Modbus enabled **IRmax** must be connected to auxiliary junction boxes as shown in Diagram 5 above.

4.1 Installation

4.1.1 Mounting

The auxiliary junction box should be installed at the designated location with the detector entry pointing down.

4.1.2 Cabling requirement

The spigot gland has five wires running through it to enable the user to connect one end to the detector and the other end to the junction box. Correct connection of wires at each end can easily be achieved through colour coding of the wires (as shown in Diagram 7).

4.1.3 How to fit IRmax or IREX to a junction box

1. Carefully remove the outer section **1** of the spigot gland (see Diagram 8).
2. Screw the narrow end **2** of the spigot gland into the auxiliary junction box.
3. Raise the detector to the auxiliary junction box and pass the wires through the assembly and into the auxiliary junction box. Secure the detector by screwing the collar tightly to the cable gland. Tighten grub screw **3**.
4. The main body of the detector can be swivelled horizontally at any angle, provided it is mechanically secure, does not interfere with other equipment and is accessible for maintenance.

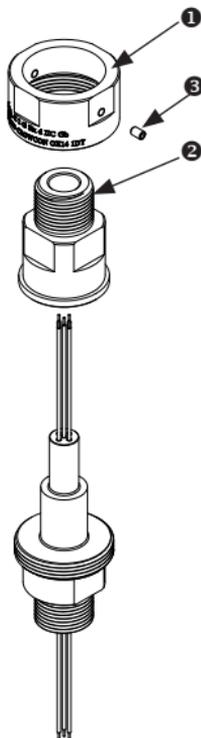


Diagram 8

4.1.4 Field cable termination

Field cables must be terminated to the auxiliary junction box using Exd certified cable glands suitable for the type of cable used.

5. PC communications kit

The **IRmax** or **IREX** can be linked to a computer using a PC communications kit, a small unit with appropriate power and data input and output ports. An LCD shows the output signal from the detector.

Connecting the detector to a PC opens up the possibility of uploading data from the detector, as well as performing other functions such as zeroing and calibration.

Full details of how to carry out these functions are detailed in the PC communications kit manual to be found on the CD supplied with the kit, which also holds the software to be installed on the PC.

Warning:

The PC communications kit is not certified for use in a hazardous area. For monitoring the IRmax in a hazardous area, choose a model incorporating the IR Display.

The kit contains the communications module (shown in section 5.2), USB and Molex connection leads, and CD containing PC communications kit software and manual in pdf format.

Separate versions of the PC communications kit are supplied for the **IREX** and **IRmax**. They are not interchangeable.

5.1 Using the PC communications kit

1. Install the PC communications kit software on to a computer from the CD provided.
2. Connect the PC communications module to computer. The computer will provide power to the communications module via the USB cable.
3. Connect the PC communications module to the detector. Power to the detector can be supplied via the power cable or directly from a DC supply. The LCD will show signal current in units of 10 microamps, 2000=20mA.

If the detector has a USB port, the connection to the communications module can be made using the USB cable. Some **IRmax** detectors do not have such a port; in this case use the 6-way Molex lead provided.

4. Launch the PC communications kit software. The computer will detect the communications module and the interface can be used to monitor and control the detector. Full instructions are provided in the PC communications kit manual (M07967) which is on the CD provided.

5.2 The communications module

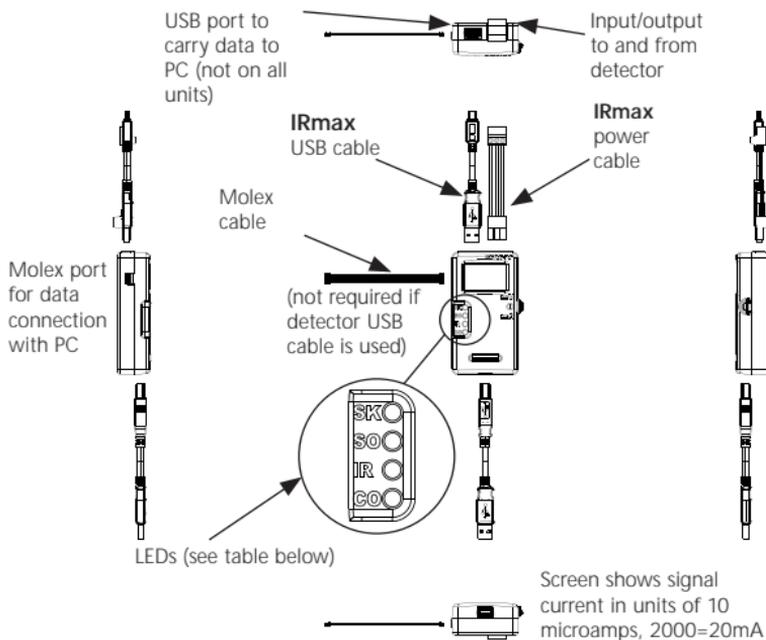


Diagram 9

Legend	Description
SK	Sink
SO	Source
IR	IRmax or IREX
CO	Comms

This equipment leaves our factory fully tested and calibrated. If within the warranty period of one year from despatch, the equipment is proved to be defective by reason of faulty workmanship or material, we undertake at our option either to repair or replace it free of charge, subject to the conditions below.

Warranty Procedure

To facilitate efficient processing of any claim, contact our customer support team on +44 (0)1235 557711 with the following information:

Your contact name, phone number, fax number and email address.

Description and quantity of goods being returned, including any accessories.

Instrument serial number(s).

Reason for return.

Obtain a Returns form for identification and traceability purposes. This form may be downloaded from our website 'crowconsupport.com', along with a returns label. Alternatively we can 'email' you a copy.

IRmax will not be accepted for warranty without a Crowcon Returns Number (CRN). It is essential that the address label is securely attached to the outer packaging of the returned goods.

The guarantee will be rendered invalid if the instrument is found to have been altered, modified, dismantled, or tampered with. The warranty does not cover misuse or abuse of the unit.

Warranty Disclaimer

Crowcon accept no liability for consequential or indirect loss or damage howsoever arising (including any loss or damage arising out of the use of the instrument) and all liability in respect of any third party is expressly excluded.

This warranty does not cover the accuracy of the calibration of the unit or the cosmetic finish of the product. The unit must be maintained in accordance with the instructions in the manual.

The warranty on replacement consumable items (such as the mirror) supplied under warranty to replace faulty items, will be limited to the unexpired warranty of the original supplied item.

Crowcon reserves the right to determine a reduced warranty period, or decline a warranty period for any sensor supplied for use in an environment or for an application known to carry risk of degradation or damage to the sensor.

Our liability in respect of defective equipment shall be limited to the obligations set out in the guarantee and any extended warranty, condition or statement, express or implied statutory or otherwise as to the merchantable quality of our equipment or its fitness for any particular purpose is excluded except as prohibited by statute. This guarantee shall not affect a customer's statutory rights.

Crowcon reserves the right to apply a handling and carriage charge whereby units returned as faulty, are found to require only normal calibration or servicing, which the customer then declines to proceed with.

For warranty and technical support enquiries please contact:

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