



**A flammable gas transmitter  
for use with remotely mounted  
flammable gas sensors**

# Sensepoint XCD RFD



## Applications

- Compatible with high temperature sensors for use in and around Gas Turbine Enclosures and solvent based printing and coating drying ovens
- Compliant with the requirements of HSE guidance note PM84
- Transmitter can be mounted in easy to access area even if sensor is in a hard to access or restricted access area
- Sensor can be mounted up to 30 metres (100 feet) from transmitter
- Standard temperature catalytic and infrared sensor types also available

## Reliable detection

- Compatible with Honeywell Analytics' proven catalytic bead flammable gas sensors
- High temperature gas sensors have thermally matched beads for highest accuracy and stability enabling low alarm levels
- Gas sensors use long life, poison resistant beads as standard, reducing ongoing cost of ownership

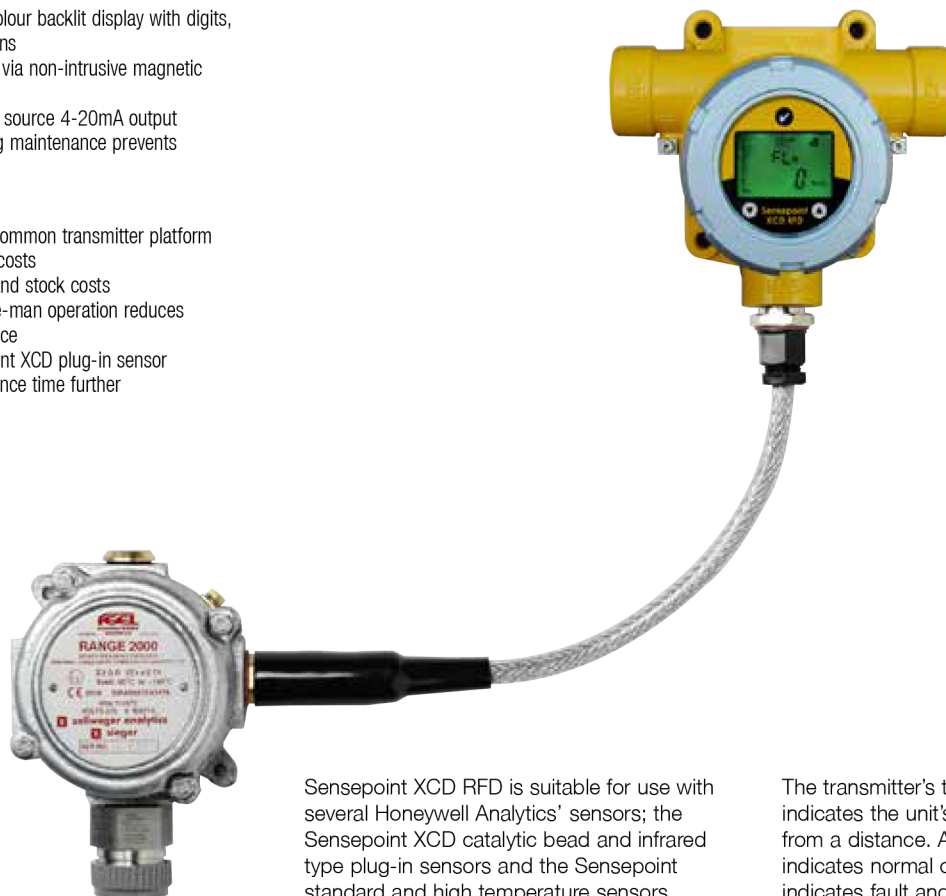
## Easy to Use

- Easy to read tri-colour backlit display with digits, bar graph and icons
- Fully configurable via non-intrusive magnetic switches
- Selectable sink or source 4-20mA output
- Auto-inhibit during maintenance prevents false alarms

## Cost Effective

- Sensepoint XCD common transmitter platform
- Reduces training costs
- Reduced spares and stock costs
- Non-intrusive, one-man operation reduces cost of maintenance
- Optional Sensepoint XCD plug-in sensor reduces maintenance time further

**Sensepoint XCD RFD (Remote Flammable Detector) has been specifically designed for use with remotely mounted flammable gas sensors. This configuration is ideal for applications where the sensor is required to be mounted remotely from the transmitter in areas where temperatures are well above ambient (up to 150°C/302°F), or that are difficult to access. The transmitter can be mounted at a suitable location away from this area where it is easy to access, view its display and interact with via the user interface.**



Sensepoint XCD RFD is suitable for use with several Honeywell Analytics' sensors; the Sensepoint XCD catalytic bead and infrared type plug-in sensors and the Sensepoint standard and high temperature sensors. These sensors can be mounted up to 30 metres (100 feet) away from the transmitter thereby accommodating even the most remote and inaccessible applications.

The gas range is user adjustable at the transmitter from 0-100%LEL down to 0-20%LEL. The 0-20%LEL range is particularly suited for use with the Sensepoint high temperature sensors that have thermally matched beads providing optimum accuracy and stability allowing alarm set points as low as 5%LEL.

The transmitter's tri-colour backlit LCD clearly indicates the unit's status at a glance, even from a distance. A steady green backlight indicates normal operation, flashing yellow indicates fault and flashing red indicates an alarm.

Outputs include 2 programmable alarm relays, 1 programmable fault relay as well as 4-20mA output (sink or source selectable).

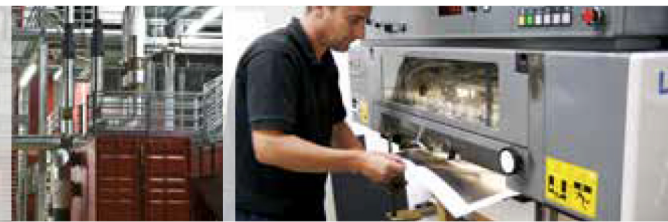
The range, relay operation, alarm set points and electronic tag number of the detector can be adjusted using the transmitter's LCD and the non-intrusive magnetic switches. Outputs are automatically inhibited during adjustment thereby reducing the risk of false alarm at the control panel during maintenance.



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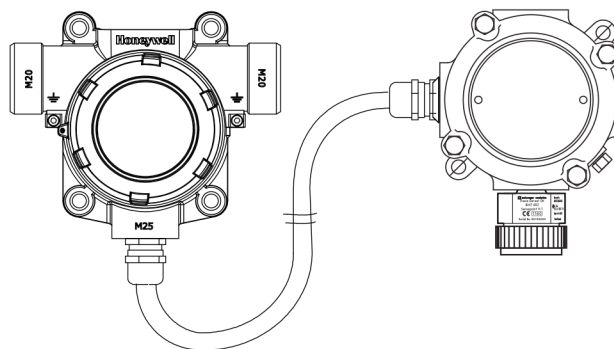


# Sensepoint XCD RFD Overview

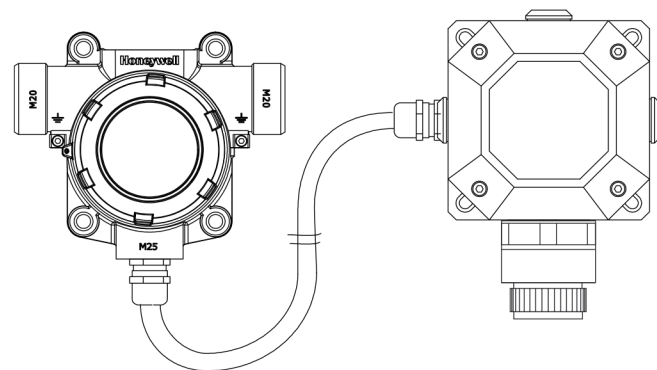


The Sensepoint XCD Remote Flammable Detector (RFD) can be used with Sensepoint XCD remote flammable sensors (Catalytic and IR), or with the Sensepoint range of flammable gas detectors. The sensors can be directly mounted to the M25 entry at the bottom of the transmitter, or remotely mounted to suitable junction boxes or duct mounting assemblies. Sensepoint flammable detectors are available in both standard and high temperature versions.

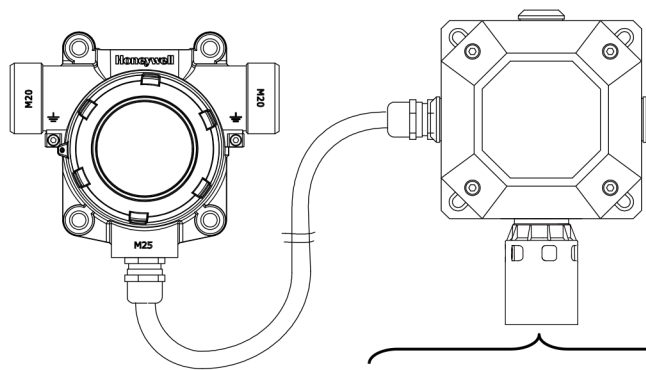
Sensepoint XCD RFD with Sensepoint high temperature flammable sensor



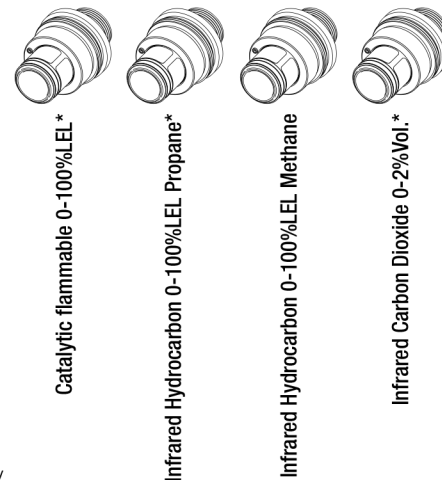
Sensepoint XCD RFD with Sensepoint standard temperature flammable sensor



Sensepoint XCD RFD with Sensepoint XCD RFD remote plug-in sensor and socket (with weather protection fitted)



Available Sensepoint XCD RFD remote plug-in sensors:



\*Contact Honeywell Analytics for availability

## Ready, Steady, Go!

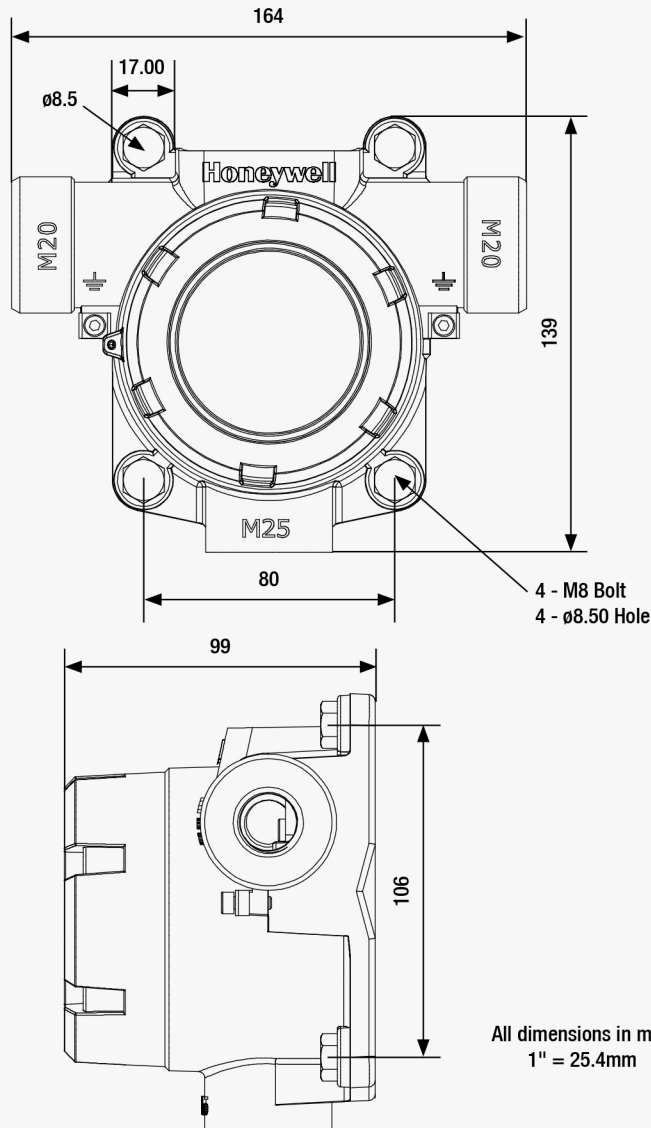
Sensepoint XCD RFD uses three instantly recognisable 'traffic light' colours to indicate its status. The large tri-colour backlit LCD flashes red to indicate an alarm, flashes yellow to indicate a fault and is steady green to indicate normal operation. This allows anyone in the area to clearly see at a glance the status of any detector. This can be particularly useful to identify detector status if the detector is located in a difficult to access area or if a number of detectors are located in the same area.





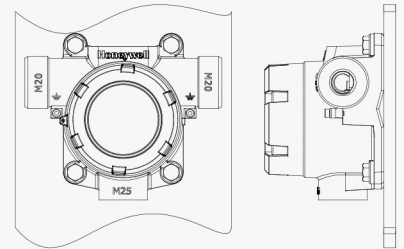
## Mechanical

The Sensepoint XCD RFD transmitter has an integral mounting plate consisting of four mounting holes on the transmitter body. The transmitter may be fixed directly to a surface mounting, or to a horizontal or vertical pipe/structure, 40.0-80.0mm (1.6 to 3.1 inches) in diameter/cross section. The pipe mounting bracket accessory (optional accessory) may be used for this purpose.

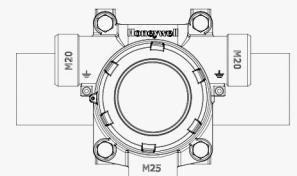


All dimensions in mm.  
1" = 25.4mm

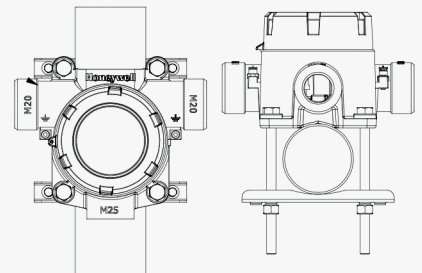
## Installation Options



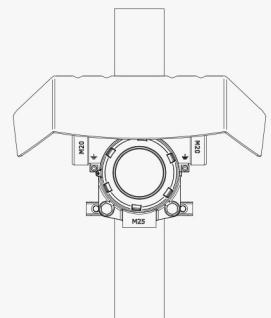
Wall mounted



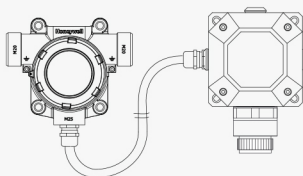
Horizontal pipe mounted  
(Using optional pipe mounting kit)



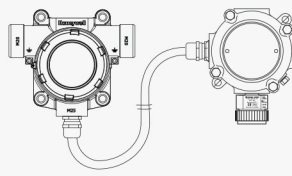
Vertical pipe mounted  
(Using optional pipe mounting kit)



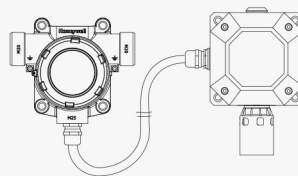
Optional sunshade/deluge protection



Typical installation of  
Sensepoint XCD RFD with  
remote Sensepoint standard  
temp sensor



Typical installation of  
Sensepoint XCD RFD  
with remotely mounted  
Sensepoint High  
Temperature sensor



Typical installation of  
Sensepoint XCD RFD  
with remotely mounted  
Sensepoint XCD  
plug-in sensor

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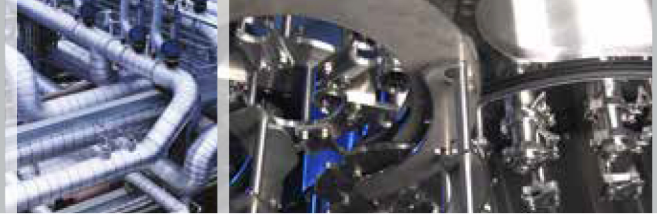
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# Installation

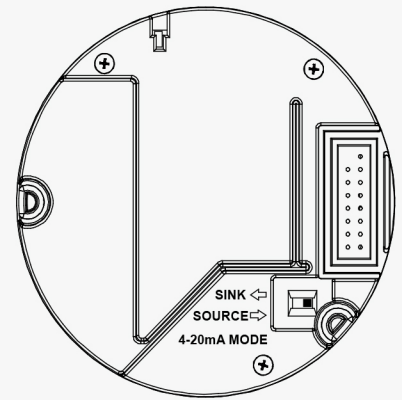
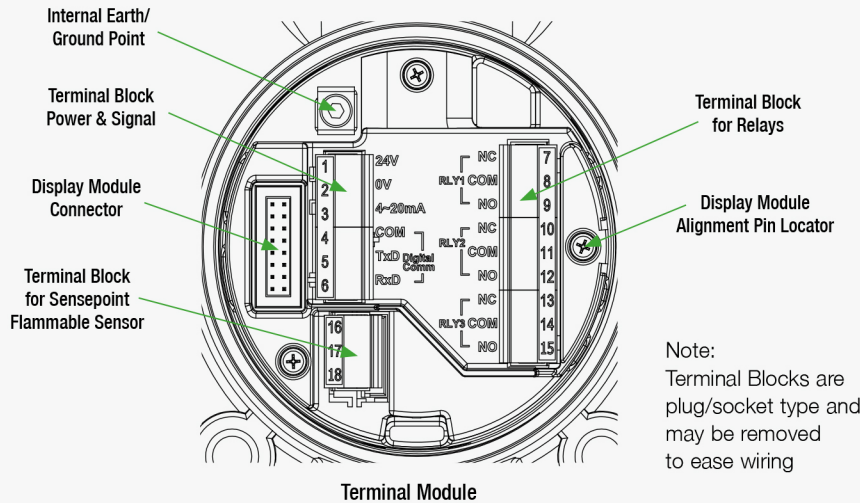


## Electrical

Sensepoint XCD RFD is designed for use in potentially explosive atmospheres. As such, installation should follow national guidelines using suitable mechanically protected cable and glands (M20 and M25). Use 0.5mm<sup>2</sup> to 2.5mm<sup>2</sup> cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length.



| Terminal Module Connections |              |  |   |
|-----------------------------|--------------|--|---|
| Terminal Number             | Marking      | Connection   | Description                                 |
| 1                           | 24V          | +VE Supply (18 - 32VDC)                                      | Controller Connections                      |
| 2                           | 0V           | -VE Supply (0VDC)  |   |
| 3                           | 4~20mA       | Current Output Signal  |   |
| 4                           | COM          | Drain  | MODBUS RTU.<br>RS485 (Optional/<br>Pending) |
| 5                           | TxD          | MODBUS B (+)   |   |
| 6                           | RxD          | MODBUS A (-)   |   |
| 7                           | RLY1/NC      | Normally Closed  | Programmable Relay 1<br>(Default A1)        |
| 8                           | RLY1/COM     | Common   |   |
| 9                           | RLY1/NO      | Normally Open  |   |
| 10                          | RLY2/NC      | Normally Closed  | Programmable Relay 2<br>(Default A2)        |
| 11                          | RLY2/COM     | Common   |   |
| 12                          | RLY2/NO      | Normally Open  |   |
| 13                          | RLY3/NC      | Normally Closed  | Programmable Relay 3<br>(Default Fault)     |
| 14                          | RLY3/COM     | Common   |   |
| 15                          | RLY3/NO      | Normally Open  |   |
| 16                          | +VE          | Sensitive (Sensor Brown Wire)                                | RFD Sensor Connections                      |
| 17                          | -VE          | Non-Sensitive (Sensor Blue Wire)                             |   |
| 18                          | 01           | Signal (Sensor White Wire)                                   |   |
| Earth Point                 | Earth Symbol | Earth Wire (Green- Sensepoint High Temperature version only) |   |



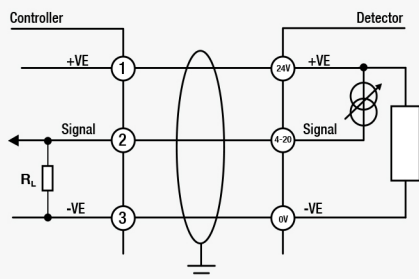
Puck Rear View

## Wiring Schematics

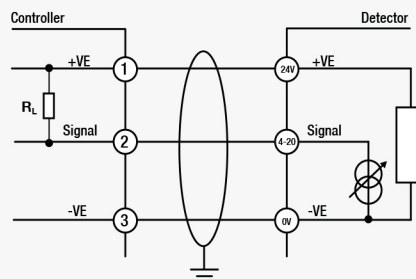
The Sensepoint XCD RFD transmitter may be wired in either current source or current sink configuration. These two options are offered to allow greater flexibility in the type of control system that it can be used with. Source/sink is selectable via the switch located on the back side of the display module; accessible by removing the display module during installation/commissioning.

Note:  
Terminate cable screen at the detector or the controller, not both.

### Detector to Controller Wiring Schematics

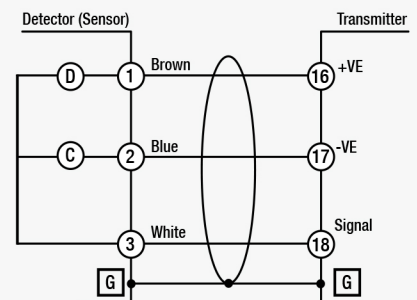


Sensepoint XCD RFD Source Configuration



Sensepoint XCD RFD Sink Configuration

### Transmitter to Sensor Wiring Schematic



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# Installation and Technical Summary



## Typical Cable Lengths

| Typical Cable Data                   |                  |      | Maximum Cable Length |      |        |      |
|--------------------------------------|------------------|------|----------------------|------|--------|------|
| Cable Size<br>(Cross Sectional Area) | Cable Resistance |      | Catalytic            |      | IR     |      |
|                                      | Ω/km             | Ω/mi | Metres               | Feet | Metres | Feet |
| 0.5mm <sup>2</sup> (20AWG*)          | 36.8             | 59.2 | 356                  | 1167 | 420    | 1379 |
| 1.0mm <sup>2</sup> (17AWG*)          | 19.5             | 31.4 | 671                  | 2201 | 793    | 2599 |
| 1.5mm <sup>2</sup> (16AWG*)          | 12.7             | 20.4 | 1031                 | 3387 | 1217   | 4000 |
| 2.0mm <sup>2</sup> (14AWG*)          | 10.1             | 16.3 | 1296                 | 4239 | 1531   | 5006 |
| 2.5mm <sup>2</sup> (13AWG*)          | 8                | 12.9 | 1636                 | 5356 | 1932   | 6326 |

Note:

Table given for guidance only. Users should calculate maximum distances using actual data for cable being used. Typical calculation assumes minimum guaranteed controller supply of 24VDC, minimum detector voltage of 18VDC and maximum power supply under full alarm.  $R_L$  (max) is 250ohms.

## Sensepoint XCD RFD Transmitter

**Use** 3 wire 4-20mA gas transmitter for use with remotely mounted flammable gas detectors to protect plant and personnel from flammable gas hazards. Transmitter incorporates in-built alarm and fault relays, local tri-colour LCD display and is fully configurable via non-intrusive magnetic switch interface.

### Electrical

|                       |   |
|-----------------------|---|
| Input Voltage Range   | 18 to 32VDC (24VDC nominal)   |
| Max Power Consumption | 5 Watts   |
| Current Output        | Sink or source  |
| ≥0.0<1.0mA            | Fault   |
| 2.0mA or 4.0mA        | Inhibit (during configuration/user settings)  |
| 4.0mA to 20.0mA       | Normal gas measurement  |
| 22.0mA                | Maximum over range  |
| Terminals             | 18 x screw terminals suitable for wire diameter 0.5mm <sup>2</sup> to 2.5mm <sup>2</sup> (20AWG to 14AWG)   |
| Relays                | 3 x 5A@250VAC. Selectable normally open or normally closed (switch) and energised de-energised (programmable)<br>Alarm relays default normally open/de-energised. Fault relay default normally open/energised |

### Construction

|                        |  |   |
|------------------------|--|---|
| <b>Material</b>        | Transmitter Housing  | Epoxy painted aluminium alloy LM25 or 316 stainless steel   |
|                        | Sensor   | Sensepoint XCD plug-in sensor and Sensepoint High Temperature sensor: 316 stainless steel.<br>Sensepoint Standard Sensor: PPS |
| <b>Weight (approx)</b> | Weather Protection   | Plastic   |
|                        | Aluminium Alloy LM25   | 2.0kg (4.4lbs)  |
| <b>Mounting</b>        | 316 Stainless Steel  | 5.0kg (11lbs)   |
|                        | Integral mounting plate with 4 x mounting holes suitable for M8 bolts  |   |
| <b>Entries</b>         | Optional pipe mounting kit for horizontal or vertical pipe Ø1.5 to 3" (2" nominal)   |   |
|                        | European ATEX/IECEx versions: 2 x M20 side entries and 1 x M25 bottom entry. Suitable blanking plug supplied for use if only 1 side entry used. Seal to maintain IP rating |   |

## Detectable Gases and Sensepoint XCD RFD Sensor Performance

| Gas   | Selectable Full Scale Range | Default Range | Steps  | Selectable Cal Gas Range               | Default Cal Point | Response Time (T60) Secs | Response Time (T90) Secs | Accuracy     | Operating Temperature |               | Default Alarm Points |          |
|---|-----------------------------|---------------|--------|--|-------------------|--------------------------|--------------------------|--------------|-----------------------|---------------|----------------------|----------|
|   |                             |               |        |  |                   |                          |                          |              | Min                   | Max           | A1                   | A2       |
| Sensepoint Standard Temperature Sensor        |                             |               |        | 25 to 95% of selected full scale range |                   |                          |                          |              |                       |               |                      |          |
| Flammable 1 to 8*                             | 20 to 100%LEL               | 100%LEL       | 10%LEL |  | 50%LEL            |                          | <25                      | <+/- 1.5%LEL | -55°C / -67°F         | 80°C / 176°F  | 20%LEL ▲             | 40%LEL ▲ |
| Sensepoint High Temperature Sensor            |                             |               |        |  |                   |                          |                          |              |                       |               |                      |          |
| Flammable 1 to 8*                             | 20 to 100%LEL               | 100%LEL       | 10%LEL |  | 50%LEL            | <6                       | <10                      | <+/- 1.5%LEL | -55°C / -67°F         | 150°C / 302°F | 20%LEL ▲             | 40%LEL ▲ |
| Plug-in Sensepoint XCD Catalytic Bead Sensors |                             |               |        | 30 to 70% of selected full scale range |                   |                          |                          |              |                       |               |                      |          |
| Flammable 1 to 8*                             | 20 to 100%LEL               | 100%LEL       | 10%LEL |  | 50%LEL            |                          | <25                      | <+/- 1.5%LEL | -40°C / -40°F         | 65°C / 149°F  | 20%LEL ▲             | 40%LEL ▲ |
| Plug-in Sensepoint XCD Infrared Sensors       |                             |               |        |  |                   |                          |                          |              |                       |               |                      |          |
| Methane                                       | 20 to 100%LEL               | 100%LEL       | 10%LEL |  | 50%LEL            |                          | <30                      | <+/- 1.5%LEL | -20°C / -4°F          | 50°C / 122°F  | 20%LEL ▲             | 40%LEL ▲ |
| Propane*                                      | 20 to 100%LEL               | 100%LEL       | 10%LEL | 50%LEL                                 |                   | <30                      | <+/- 1.5%LEL             | -20°C / -4°F | 50°C / 122°F          | 20%LEL ▲      | 40%LEL ▲             |          |
| Carbon Dioxide*                               | 2.00%Vol.                   | 2.00%Vol.     | n/a    | 1.00%Vol.                              |                   | <30                      | <+/- 0.04%Vol.           | -20°C / -4°F | 50°C / 122°F          | 0.40%V/V. ▲   | 0.80%V/V. ▲          |          |

### NOTES

Performance data is: 1. Taken at nominal 20°C, 50%RH. 2. Applicable over the range 10 to 90% full scale. 3. Measured on units calibrated at 50% full scale. 4. Accuracy at 10% of default full scale (typical A1 alarm) of applied gas, or minimum (whichever is greater). 5. Measured at 500ml/min for IR and 1 Ltr/min for Catalytic bead using the calibration cup. Contact Honeywell Analytics for any additional data or details. For more details on the Sensepoint Standard and High Temperature sensors refer to Datasheet DS01069.

▲ - Rising Alarm ▼ - Falling Alarm

## Certification

|                      |   |
|----------------------|---|
| <b>European</b>      | ATEX Ex II 2 GD Ex d IIC Gb T6 (Ta -40°C to +65°C) Ex tb IIIC T85°C Db IP66 |
| <b>International</b> | IEC Ex d IIC Gb T6 (Ta -40°C to +65°C) Ex tb IIIC T85°C Db IP66             |
| <b>China</b>         | GB Ex d IIC T4 GB3836.1&2 -2000, PA, CCCF                                   |
| <b>Korea</b>         | KTL Ex d IIC T6 (-40°C to +65°C)  |
| <b>EMC</b>           | CE: EN50270:2006 EN6100-6-4:2007  |



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# Technical Summary cont. and Ordering Information

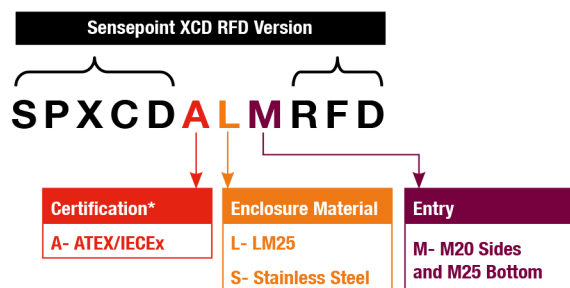


## Environmental

|  |  |
|--|--|
| <b>IP Rating</b>                             | IP66 in accordance with EN60529:1992   |
| <b>Transmitter Certified Operating Range</b> | -40°C to +65°C (-40°F to +149°F)<br>Note:<br>The detector display may become illegible at temperatures below -20°C, but the detector continues its gas monitoring function. The display is not damaged and recovers when the temperature rises back above -20°C. |
| <b>Operating Humidity</b>                    | Continuous 20-90%RH (non-condensing), Intermittent 0-99%RH (non-condensing)  |
| <b>Operating Pressure</b>                    | 90-110kPa  |
| <b>Storage Conditions</b>                    | -25°C to +65°C (-13°F to 131°F)  |

## Transmitter Ordering Information

|                         |  |
|-------------------------|--|
| <b>Standard Supply</b>  | Sensepoint XCD RFD is supplied complete with integral wall mounting plate, 2 x M20 side entries and 1 x M25 bottom entry. 1 x M20 plug, Allen key for locking screw, operating magnet, quick start guide and instruction manual CD. Default settings, ranges and calibrations are 100% tested at the factory. Each unit is supplied with a test certificate. |
| <b>Shipping Details</b> | Shipping carton dimensions: L312mm (12.3") x W223mm (8.8") x D110mm (4.3") Approximate weight: aluminium 2.5kg (5.5lbs), stainless steel 5.5kg (12.1lbs)   |



Note:  
Order required sensor separately  
\*Asian certifications also available



## Sensepoint XCD RFD Transmitter

|                     |  |
|---------------------|--|
| <b>SPXCDAASMRFD</b> | ATEX/IECEx & AP approved SP XCD RFD Transmitter with 316SS |
| <b>SPXCDAALMRFD</b> | ATEX/IECEx & AP approved SP XCD RFD Transmitter with LM25  |

## Sensepoint Flammable - High Temperature (0-20%LEL or 0-100%LEL +150°C)

|                  |   |
|------------------|---|
| <b>2106B2310</b> | Sensepoint HT Flammable Sensor (ATEX) M20     |
| <b>2106B2311</b> | Sensepoint HT Flammable Sensor (ATEX) M25     |
| <b>2106B2312</b> | Sensepoint HT Flammable Sensor (ATEX) 3/4 NPT |

## Sensepoint Flammable (0-100%LEL +80°C)

|                  |   |
|------------------|---|
| <b>2106B1200</b> | Sensepoint 0-100% LEL Flam. Sensor M20    |
| <b>2106B1201</b> | Sensepoint 0-100% LEL Flam. Sensor M25    |
| <b>2106B1202</b> | Sensepoint 0-100% LEL Flam. Sensor M26    |
| <b>2106B1204</b> | Sensepoint 0-100% LEL Flam. Sensor 3/4NPT |

## Sensepoint XCD Remote Flammable Sensor (XCD Sensor Cartridge + Socket Housing)

|                    |   |
|--------------------|---|
| <b>SPXCDSRFXSS</b> | Sensepoint XCD RFD remote plug-in sensor and socket, flammable CAT 0-100%LEL (20,0 to 100.0%LEL)* |
| <b>SPXCDSRRXSS</b> | Sensepoint XCD RFD remote plug-in sensor and socket, Methane IR 0-100%LEL (20,0 to 100.0%LEL)     |
| <b>SPXCDSRPXSS</b> | Sensepoint XCD RFD remote plug-in sensor and socket, Propane IR 0-100%LEL (20,0 to 100.0%LEL)*    |
| <b>SPXCDSRB1SS</b> | Sensepoint XCD RFD remote plug-in sensor and socket, Carbon Dioxide IR 0-2.00%VOL only*           |

## Accessories

|                     |  |
|---------------------|--|
| <b>00780-A-0100</b> | Term Hsg - Bartec DE1155 With Continuity Plate 1 x 25mm - 3 x 20mm Entries - ATEX Approved   |
| <b>2052D0001</b>    | High temperature Exe junction box. ATEX approved. 3 x M20 Entries  |
| <b>90053-A-7041</b> | High temperature single duct mounting assembly for use with FEEL Range 2000 junction box (P/N 2052D0001) - for use with European Sensepoint type detectors |
| <b>S3KCAL</b>       | Calibration cup  |
| <b>SPXCDCC</b>      | Collecting cone for use with lighter than air gases  |
| <b>SPXCDDMK</b>     | Duct mounting kit  |
| <b>SPXCDHMRTE</b>   | Hard copy manual in English  |
| <b>SPXCDDMTBR</b>   | Mounting bracket (inc. bolts, nuts, brackets)  |
| <b>SPXCDSDP</b>     | Sunshade/deluge protection   |
| <b>SPXCDDWP</b>     | XCD Weather proof cap  |

## Spare XCD Plug in sensor cartridges

|                    |  |
|--------------------|--|
| <b>SPXCDSFXSS</b>  | Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL)* |
| <b>SPXCDSRXSS</b>  | Methane IR 0-100%LEL (20 to 100%LEL, 10%LEL)     |
| <b>SPXCDSXPSS</b>  | Propane IR 0-100%LEL (20 to 100%LEL, 10%LEL)*    |
| <b>SPXCDSXB1SS</b> | Carbon Dioxide IR 0-2.00%VOL only*               |

\*Contact Honeywell Analytics for availability



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