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

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 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.
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.

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.

Available Sensepoint XCD RFD remote plug-in sensors:
- Catalytic flammable 0-100%LEL*
- Infrared Hydrocarbon 0-100%LEL Propane*
- Infrared Hydrocarbon 0-100%LEL Methane
- Infrared Carbon Dioxide 0-2%Vol.*

*Contact Honeywell Analytics for availability
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.

**Mechanical**

- All dimensions in mm.
- 1" = 25.4mm
- 1° = 25.4mm

**Installation Options**

- **Horizontal pipe mounted** (Using optional pipe mounting kit)
- **Vertical pipe mounted** (Using optional pipe mounting kit)

**Typical installation of**

- Sensepoint XCD RFD with remote Sensepoint standard temp sensor
- Sensepoint XCD RFD with remotely mounted Sensepoint High Temperature sensor
- Sensepoint XCD RFD with remotely mounted Sensepoint XCD plug-in sensor
- Optional sunshade/deluge protection
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 0.5mm² to 2.5mm² cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length.

### Terminal Module Connections

<table>
<thead>
<tr>
<th>Terminal Number</th>
<th>Marking</th>
<th>Connection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24V</td>
<td>+VE Supply (18 - 32VDC)</td>
<td>Controller Connections</td>
</tr>
<tr>
<td>2</td>
<td>0V</td>
<td>-VE Supply (0VDC)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4~20mA</td>
<td>Current Output Signal</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>COM</td>
<td>Drain</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>TxD</td>
<td>MODBUS B (+)</td>
<td>MODBUS RTU, RS485 (Optional/Pending)</td>
</tr>
<tr>
<td>6</td>
<td>RxD</td>
<td>MODBUS A (-)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RLY1/NC</td>
<td>Normally Closed</td>
<td>Programmable Relay 1 (Default A1)</td>
</tr>
<tr>
<td>8</td>
<td>RLY1/COM</td>
<td>Common</td>
<td>Programmable Relay 2 (Default A2)</td>
</tr>
<tr>
<td>9</td>
<td>RLY1/NO</td>
<td>Normally Open</td>
<td>Programmable Relay 3 (Default A3)</td>
</tr>
<tr>
<td>10</td>
<td>RLY2/NC</td>
<td>Normally Closed</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>RLY2/COM</td>
<td>Common</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>RLY2/NO</td>
<td>Normally Open</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>RLY3/NC</td>
<td>Normally Closed</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>RLY3/COM</td>
<td>Common</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>RLY3/NO</td>
<td>Normally Open</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>+VE</td>
<td>Sensitive (Sensor Brown Wire)</td>
<td>RF Sensor Connections</td>
</tr>
<tr>
<td>17</td>
<td>-VE</td>
<td>Non-Sensitive (Sensor Blue Wire)</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>01</td>
<td>Signal (Sensor White Wire)</td>
<td></td>
</tr>
</tbody>
</table>

**Earth Point**

| Earth Symbol | Earth Wire (Green- Sensepoint High Temperature version only) |

**Note:**

Terminal Blocks are plug/socket type and may be removed to ease wiring.

### 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.

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**Detector to Controller Wiring Schematics**

**Transmitter to Sensor Wiring Schematic**
### Installation and Technical Summary

#### Typical Cable Lengths

<table>
<thead>
<tr>
<th>Cable Size (Cross Sectional Area)</th>
<th>Typical Cable Data</th>
<th>Maximum Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cable Resistance</td>
<td>Catalytic</td>
</tr>
<tr>
<td></td>
<td>Ω/㎞</td>
<td>Ω/ft</td>
</tr>
<tr>
<td>0.5mm² (20AWG*)</td>
<td>36.8</td>
<td>59.2</td>
</tr>
<tr>
<td>1.0mm² (17AWG*)</td>
<td>19.5</td>
<td>31.4</td>
</tr>
<tr>
<td>1.5mm² (16AWG*)</td>
<td>12.7</td>
<td>20.4</td>
</tr>
<tr>
<td>2.0mm² (14AWG*)</td>
<td>10.1</td>
<td>16.3</td>
</tr>
<tr>
<td>2.5mm² (13AWG*)</td>
<td>8.2</td>
<td>12.9</td>
</tr>
</tbody>
</table>

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( 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**: 250ohms.

**Terminals**
18 x screw terminals suitable for wire diameter 0.5mm 2 to 2.5mm2 (20AWG to 14AWG)

**Relays**
3 x 5A@250VAC. Selectable normally open or normally closed (switch) and energised de-energised (programmable). Alarm relays default normally open/de-energised. Fault relay default normally open/energised.

**Construction**

- **Material**
  - Transmitter Housing: Epoxy painted aluminium alloy LM25 or 316 stainless steel
  - Sensepoint Standard Sensor: PPS
- **Weather Protection**: Plastic
- **Weight (approx)**
  - Aluminium Alloy LM25: 2.0kg (4.4lbs)
  - 316 Stainless Steel: 5.0kg (11lbs)
- **Mounting**
  - Integral mounting plate with 4 x mounting holes suitable for M8 bolts
  - Optional pipe mounting kit for horizontal or vertical pipe Ø1.5 to 3" (2" nominal)
- **Entries**
  - 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

<table>
<thead>
<tr>
<th>Gas</th>
<th>Selectable Full Scale Range</th>
<th>Default Range</th>
<th>Steps</th>
<th>Selectable Cal Gas Range</th>
<th>Default Cal Point</th>
<th>Response Time (T60) Secs</th>
<th>Response Time (T90) Secs</th>
<th>Accuracy</th>
<th>Operating Temperature Min</th>
<th>Max</th>
<th>Default Alarm Points A1</th>
<th>A2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensepoint Standard Temperature Sensor</td>
<td>Flammable 1 to 8&quot;</td>
<td>20 to 100%LEL</td>
<td>100%LEL</td>
<td>10%LEL</td>
<td>25 to 95% of selected full scale range</td>
<td>50%LEL</td>
<td>&lt;25</td>
<td>&lt;x&lt;1.5%LEL</td>
<td>-50°C / -67°F</td>
<td>80°C / 176°F</td>
<td>20%LEL</td>
<td>40%LEL</td>
</tr>
<tr>
<td>Sensepoint High Temperature Sensor</td>
<td>Flammable 1 to 8&quot;</td>
<td>20 to 100%LEL</td>
<td>100%LEL</td>
<td>10%LEL</td>
<td>50%LEL</td>
<td>&lt;6</td>
<td>&lt;x&lt;1.5%LEL</td>
<td>-55°C / -67°F</td>
<td>150°C / 302°F</td>
<td>20%LEL</td>
<td>40%LEL</td>
<td></td>
</tr>
<tr>
<td>Plug-in Sensor XCD Catalytic Bead Sensors</td>
<td>Flammable 1 to 8&quot;</td>
<td>20 to 100%LEL</td>
<td>100%LEL</td>
<td>10%LEL</td>
<td>50%LEL</td>
<td>&lt;25</td>
<td>&lt;&lt;x&lt;1.5%LEL</td>
<td>-40°C / -40°F</td>
<td>65°C / 149°F</td>
<td>20%LEL</td>
<td>40%LEL</td>
<td></td>
</tr>
<tr>
<td>Plug-in Sensor XCD Infrared Sensors</td>
<td>Methane</td>
<td>20 to 100%LEL</td>
<td>100%LEL</td>
<td>10%LEL</td>
<td>50%LEL</td>
<td>&lt;30</td>
<td>&lt;&lt;x&lt;1.5%LEL</td>
<td>-20°C / -4°F</td>
<td>50°C / 122°F</td>
<td>20%LEL</td>
<td>40%LEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carbon Dioxide*</td>
<td>2.0%Vol.</td>
<td>2.0%Vol</td>
<td>0%</td>
<td>1.0%Vol</td>
<td>&lt;30</td>
<td>&lt;&lt;x&lt;0.04%Vol</td>
<td>-20°C / -4°F</td>
<td>50°C / 122°F</td>
<td>0.40%Vol</td>
<td>0.80%Vol</td>
<td></td>
</tr>
</tbody>
</table>

**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.

**Certification**

- **European**: ATEX Ex II 2 GD Ex d IIC T6 (Ta -40°C to +60°C) to +690°C Ex tbc IEC T85°C Db/IP66
- **International**: IEC Ex d IIC T6 (Ta -40°C to +60°C) to +690°C Ex tbc IEC T85°C Db/IP66
- **China**: GB Ex d IIC T4 GB3836.1&2 -2000, PA, CCCF
- **Korea**: KTL Ex d IIC T6 (-40°C to +65°C)
- **EMC**: CE: EN50270:2000 EN61000-6-4:2007

*Contact Honeywell Analytics for availability*
Technical Summary cont.

Ordering Information

Sensepoint XCD RFD Transmitter

SPXCDASMRFD
ATEX/IECEx & AP approved SP XCD RFD Transmitter with 316SS

SPXCDALMRFD
ATEX/IECEx & AP approved SP XCD RFD Transmitter with LM25

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

2106B2310
Sensepoint HT Flammable Sensor (ATEX) M20

2106B2311
Sensepoint HT Flammable Sensor (ATEX) M25

2106B2312
Sensepoint HT Flammable Sensor (ATEX) 3/4 NPT

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

2106B1200
Sensepoint 0-100% LEL Flam. Sensor M20

2106B1201
Sensepoint 0-100% LEL Flam. Sensor M25

2106B1202
Sensepoint 0-100% LEL Flam. Sensor M26

2106B1204
Sensepoint 0-100% LEL Flam. Sensor 3/4NPT

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

SPXCDXSFXSS
Sensepoint XCD RFD remote plug-in sensor and socket, flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL)*

SPXCDXPXSS
Sensepoint XCD RFD remote plug-in sensor and socket, Methane IR 0-100%LEL (20 to 100%LEL)

SPXCDXPBXSS
Sensepoint XCD RFD remote plug-in sensor and socket, Propane IR 0-100%LEL (20 to 100%LEL)

Accessories

00780-A-0100
Term Hsg - Bartec DE1155 With Continuity Plate 1 x 25mm - 3 x 20mm Entries - ATEX Approved

2052D0001
High temperature Exe junction box. ATEX approved. 3 x M20 Entries

90053-A-7041
High temperature single duct mounting assembly for use with FEEL Range 2000 junction box (P/N 2052D0001) - for use with European Sensepoint type detectors

S3KCAL
Calibration cup

SPXCDDMK
Duct mounting kit

SPXCHMRTEN
Hard copy manual in English

SPXCDMTRBR
Mounting bracket (incl. bolts, nuts, brackets)

SPXCDDSP
Sunshade/deluge protection

SPXCDWP
XCD Weather proof cap

Spare XCD Plug in sensor cartridges

SPXCDXSFX5S
Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL)*

SPXCDXSXR5SS
Methane IR 0-100%LEL (20 to 100%LEL, 10%LEL)

SPXCDXPX5SS
Propane IR 0-100%LEL (20 to 100%LEL, 10%LEL)*

SPXCDXSB15SS
Carbon Dioxide IR 0-2.00%VOL only*

*Contact Honeywell Analytics for availability

Environmental

IP Rating
IP66 in accordance with EN60529:1992

Transmitter Certified
-40ºC to +65ºC (-40ºF to +149ºF)

Operating Range
Note: 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.

Operating Humidity
Continuous 20-90%RH (non-condensing), Intermittent 0-99%RH (non-condensing)

Operating Pressure
90-110kPa

Storage Conditions
-25°C to +65°C (-13°F to 131°F)

Transmitter Ordering Information

Standard Supply
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.

Shipping Details
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)

Sensepoint XCD RFD Version

SPXCDALMRFD
Sensepoint XCD RFD Version

Certification* A- ATEX/IECEx

Enclosure Material L- LM25

Entry M- M20 Sides and M25 Bottom

S- Stainless Steel

Note: Order required sensor separately

*Asian certifications also available
Our Product Range

Fixed Gas Monitoring
Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- Detection of flammable, Oxygen and toxic gases (including exotics)
- Innovative use of four core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- Cost effective regulatory compliance solutions

Portable Gas Monitoring
When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces. These include:

- Detection of flammable, Oxygen and toxic gases
- Single gas personal monitors – worn by the individual
- Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

Technical Services
At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- Full technical support
- Expert team on hand to answer questions and queries
- Fully equipped workshops to ensure quick turnaround on repairs
- Comprehensive service engineer network
- Training on product use and maintenance
- Mobile calibration service
- Customised programmes of preventative/corrective maintenance
- Extended warranties on products

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09/12
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