Sensepoint XCD RFD

Honeywell

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

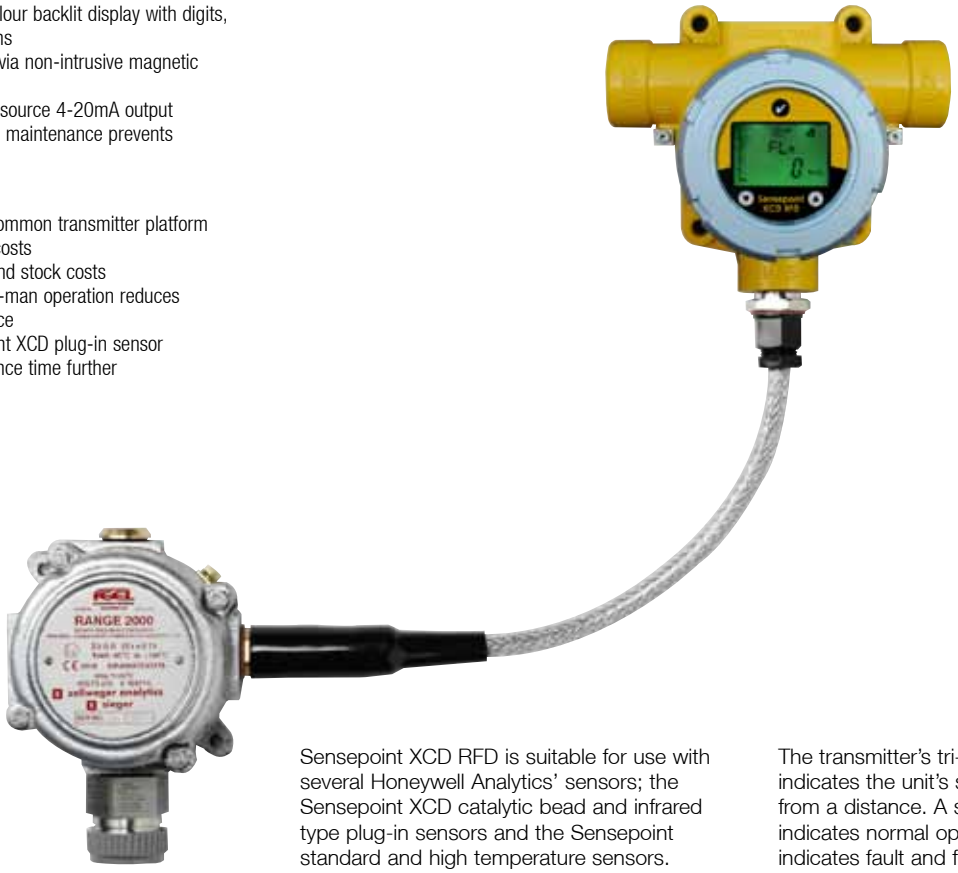
Easy to Use

- 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.

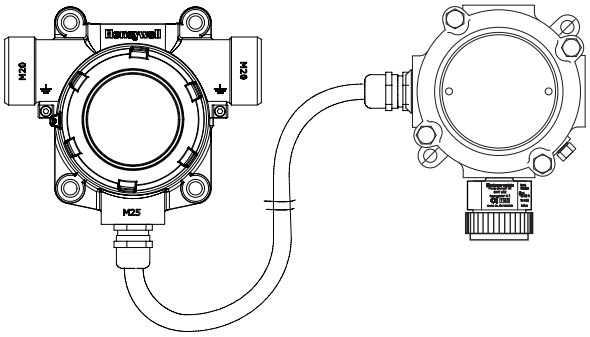
Outputs include 2 programmable alarm relays, 1 programmable fault relay as well as 4-20mA output (sink or source selectable).

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.

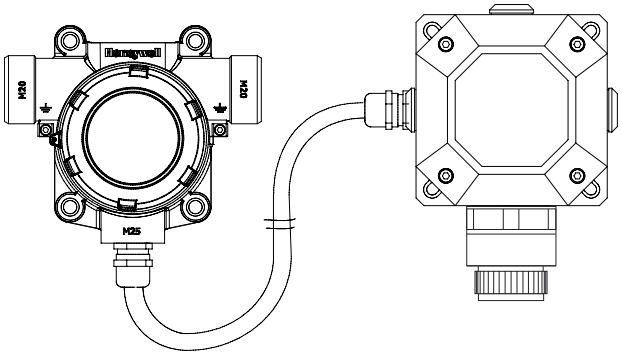
Sensepoint XCD RFD Overview

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.

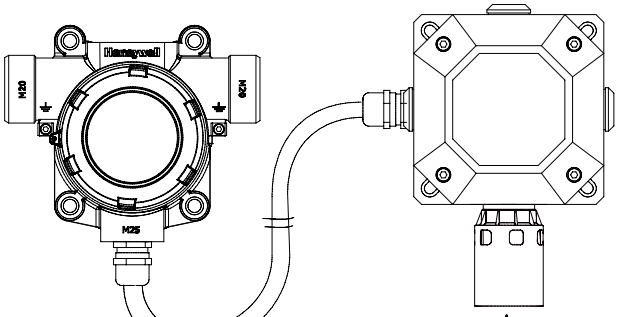
Sensepoint XCD RFD with Sensepoint high temperature flammable sensor



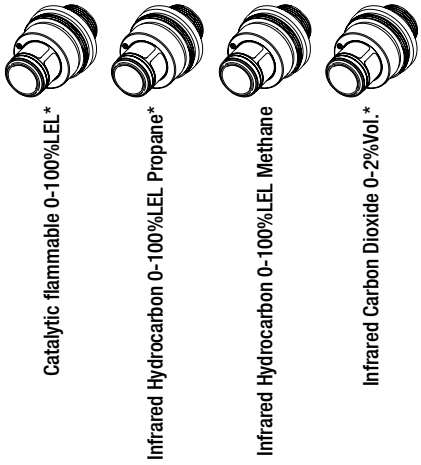
Sensepoint XCD RFD with Sensepoint standard temperature flammable sensor



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

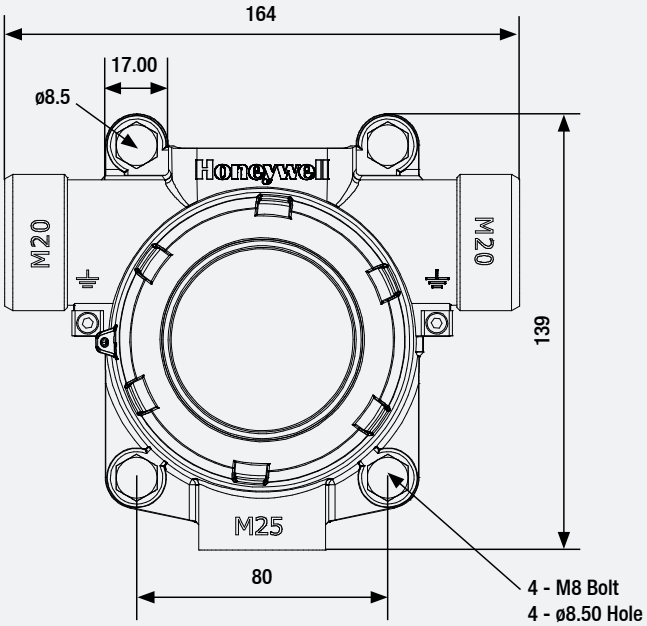
Ready, Steady, Go!

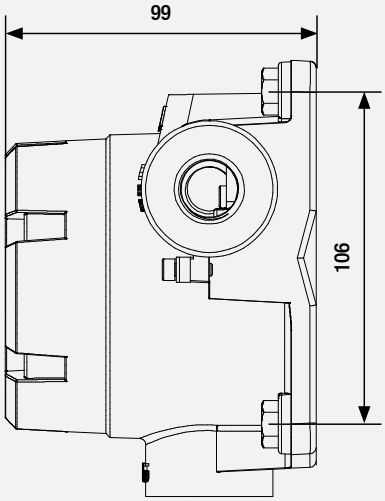
Sensepoint XCD RFD uses three instantly recognisable 'traffic light' colours to indicate its status. The large tri-colour backlit LCD flashes red to indicate an alarm, flashes yellow to indicate a fault and is steady green to indicate normal operation. This allows anyone in the area to clearly see at 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.

Installation

Mechanical

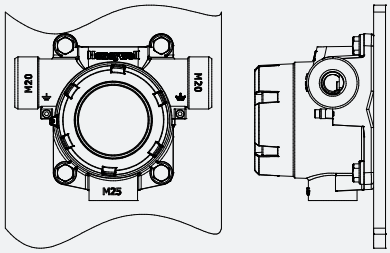
The Sensepoint XCD RFD transmitter has an integral mounting plate consisting of four mounting holes on the transmitter body. The transmitter may be fixed directly to a surface mounting, or to a horizontal or vertical pipe/structure, 40.0-80.0mm (1.6 to 3.1 inches) in diameter/cross section. The pipe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



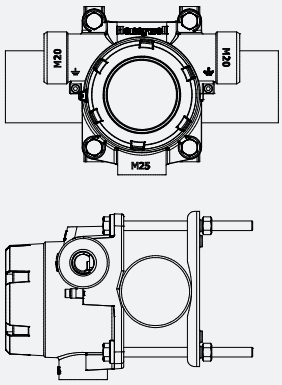


All dimensions in mm.
1" = 25.4mm

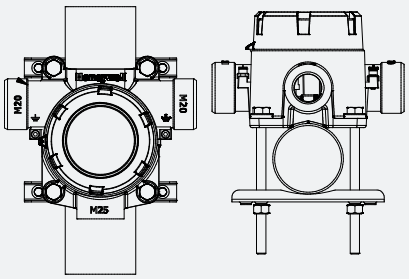
Installation Options



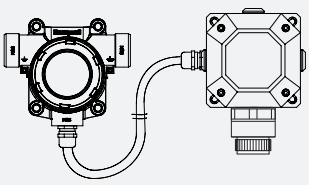
Wall mounted



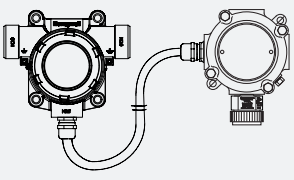
Horizontal pipe mounted
(Using optional pipe mounting kit)



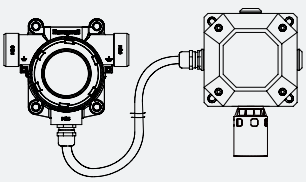
Vertical pipe mounted
(Using optional pipe mounting kit)



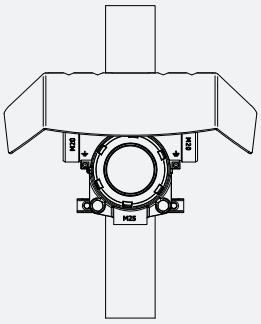
Typical installation of Sensepoint XCD RFD with remote Sensepoint standard temp sensor



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



Optional sunshade/deluge protection

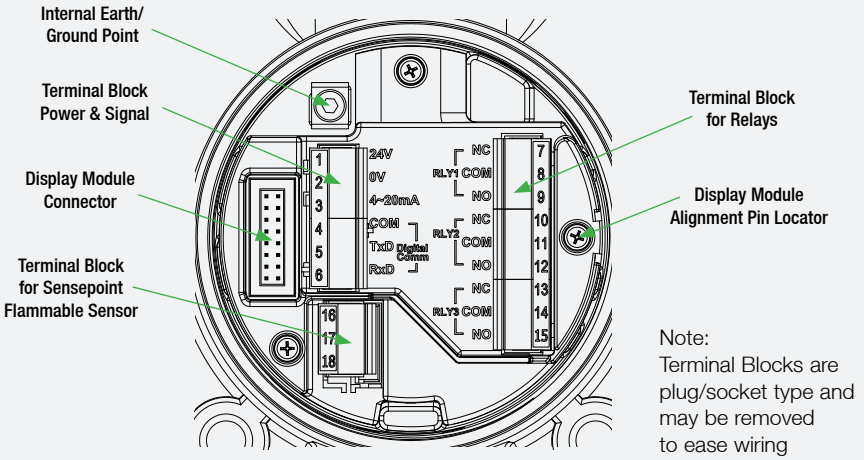
Installation

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 0.5mm² to 2.5mm² cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length.

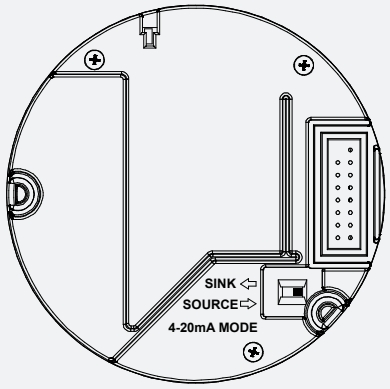
Terminal Module Connections

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. RS485 (Optional/ Pending)
5	TxD	MODBUS B (+)	
6	RxD	MODBUS A (-)	
7	RLY1/NC	Normally Closed	Programmable Relay 1 (Default A1)
8	RLY1/COM	Common	
9	RLY1/NO	Normally Open	
10	RLY2/NC	Normally Closed	Programmable Relay 2 (Default A2)
11	RLY2/COM	Common	
12	RLY2/NO	Normally Open	
13	RLY3/NC	Normally Closed	Programmable Relay 3 (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)	



Terminal Module

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



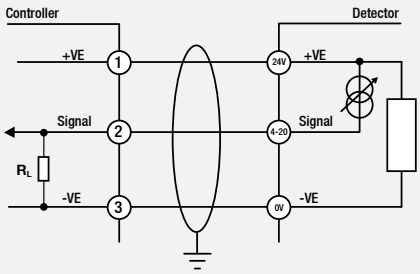
Puck Rear View

Wiring Schematics

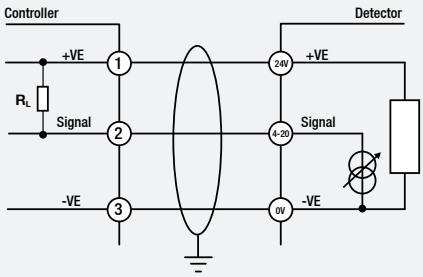
The Sensepoint XCD RFD transmitter may be wired in either current source or current sink configuration. These two options are offered to allow greater flexibility in the type of control system that it can be used with. Source/sink is selectable via the switch located on the back side of the display module;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

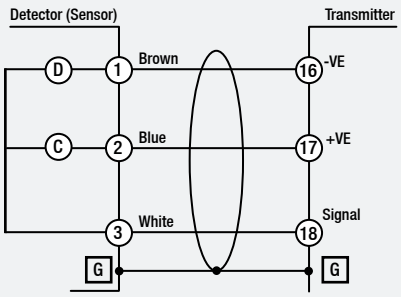


Sensepoint XCD RFD Source Configuration



Sensepoint XCD RFD Sink Configuration

Transmitter to Sensor Wiring Schematic



Installation and Technical Summary

Typical Cable Lengths

Typical Cable Data			Maximim Cable Length			
Cable Size (Cross Sectional Area)	Cable Resistance		Catalytic		IR	
	Ω/km	Ω/mi	Metres	Feet	Metres	Feet
0.5mm² (20AWG*)	36.8	59.2	356	1167	420	1379
1.0mm² (17AWG*)	19.5	31.4	671	2201	793	2599
1.5mm² (16AWG*)	12.7	20.4	1031	3387	1217	4000
2.0mm² (14AWG*)	10.1	16.3	1296	4239	1531	5006
2.5mm² (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 0.5mm² 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
	Sensor	Sensepoint XCD plug-in sensor and Sensepoint High Temperature sensor: 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

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 Min	Operating Temperature Max	Default Alarm Points A1	Default Alarm Points 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												
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				30 to 70% of selected full scale range								
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 ▲ - Rising Alarm ▼ - Falling Alarm

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 Gb T6 (Ta -40ºC to +65ºC) Ex tb IIIC T85°C Db IP66
International	IEC Ex d IIC Gb T6 (Ta -40ºC to +65ºC) Ex tb IIIC 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: EN50270:2006 EN6100-6-4:2007

*Contact Honeywell Analytics for availability

Technical Summary cont. and Ordering Information

Environmental	
IP Rating	IP66 in accordance with EN60529:1992
Transmitter Certified Operating Range	-40ºC to +65ºC (-40ºF to +149ºF) 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

Certification*	Enclosure Material	Entry
A- ATEX/IECEx	L- LM25	M- M20 Sides and M25 Bottom
	S- Stainless Steel	

Note:
Order required sensor separately
*Asian certifications also available

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)	
SPXCDXSRFXSS	Sensepoint XCD RFD remote plug-in sensor and socket, flammable CAT 0-100%LEL (20,0 to 100.0%LEL)*
SPXCDXSRRXSS	Sensepoint XCD RFD remote plug-in sensor and socket, Methane IR 0-100%LEL (20,0 to 100.0%LEL)
SPXCDXSRPXSS	Sensepoint XCD RFD remote plug-in sensor and socket, Propane IR 0-100%LEL (20,0 to 100.0%LEL)*
SPXCDXSRB1SS	Sensepoint XCD RFD remote plug-in sensor and socket, Carbon Dioxide IR 0-2.00%VOL only*
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
SPXCDCC	Collecting cone for use with lighter than air gases
SPXCDDMK	Duct mounting kit
SPXCDHMRTEN	Hard copy manual in English
SPXCDMTBR	Mounting bracket (inc. bolts, nuts, brackets)
SPXCDSDP	Sunshade/deluge protection
SPXCDWP	XCD Weather proof cap
Spare XCD Plug in sensor cartridges	
SPXCDXSFXSS	Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL)*
SPXCDXSRXSS	Methane IR 0-100%LEL (20 to 100%LEL, 10%LEL)
SPXCDXSPXSS	Propane IR 0-100%LEL (20 to 100%LEL, 10%LEL)*
SPXCDXSB1SS	Carbon Dioxide IR 0-2.00%VOL only*

*Contact Honeywell Analytics for availability

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 4 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

Find out more
www.honeywellanalytics.com

Contact Honeywell Analytics:

Europe, Middle East, Africa, India
Life Safety Distribution AG
Weiherallee 11a
CH-8610 Uster
Switzerland
Tel: +41 (0)44 943 4300
Fax: +41 (0)44 943 4398
gasdetection@honeywell.com

Americas
Honeywell Analytics Inc.
405 Barclay Blvd.
Lincolnshire, IL 60069
USA
Tel: +1 847 955 8200
Toll free: +1 800 538 0363
Fax: +1 847 955 8210
detectgas@honeywell.com

Asia Pacific
Honeywell Analytics Asia Pacific
#508, Kolon Science Valley (I)
187-10 Guro-Dong, Guro-Gu
Seoul, 152-050
Korea
Tel: +82 (0)2 6909 0300
Fax: +82 (0)2 2025 0329
analytics.ap@honeywell.com

Technical Services
EMEAI: HAexpert@honeywell.com
US: ha.us.service@honeywell.com
AP: ha.ap.service@honeywell.com

www.honeywell.com

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06/10

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