

iSERIES ELECTROCHEMICAL

002832

Issue 3

Intelligent Gas Sensors • iCO, iH₂S, iO₂, iSO₂, iH₂S HC
Instructions for Safe Use

Instructions specific to hazardous area installations (reference European ATEX Directive 2014 / 34 / EU)

MODEL NUMBERS

Carbon Monoxide (CO) Sensor: iCO	Part Number: AB010-R01D-CIT
Hydrogen Sulfide (H ₂ S) Sensor: iH ₂ S	Part Number: AC400-R00D-CIT
Hydrogen Sulfide (H ₂ S) Sensor: iH ₂ S HC	Part Number: AE400-R00D
Oxygen (O ₂) Sensor: iO ₂	Part Number: AAW85-07WD-CIT
Sulfur Dioxide (SO ₂) Sensor: iSO ₂	Part Number: AD300-R04D-CIT

MARKING

Product Marking (PCB)

CITY TECHNOLOGY P06 1SZ, UK

MODEL DESIGNATION - e.g., iseries

“nnnn” denotes the notified body issuing the ATEX QAN

“mmmm” denotes the approved body issuing the UKCA QAN

Detail	IEC Ex	ATEX	UKCA
Certificate Number	IECEX SIR 19.0084U	Sira 19ATEX2324U	CSAE 21UKEX2366U
Certification Code	Ex ia IIC Ga Ex ia I Ma	Ex ia IIC Ga Ex ia I Ma	Ex ia IIC Ga Ex ia I Ma
Other Marking		nnnn  I M1 II 1G	mmmm  I M1 II 1G

INSTRUCTIONS FOR SAFE INSTALLATION

- iseries electrochemical sensors (except iO₂) are not sensitive to orientation and can be mounted in any orientation with no significant effect on performance. The mounting method should ensure a gas tight seal. Refer to mounting application note for further details.
 - iO₂ has an orientation sensitivity of <0.2 % vol O₂ equivalent
- Sensor pins or contact pads must not be soldered to, as excessive heat may damage the sensor. Connectors are available to assist in mounting the sensors to PCBs. Please contact City Technology for further details.
- The equipment has not been assessed as a safety related device (as referred to by ATEX Directive 2014/34/EU).
- Ensure that installation of the equipment is carried out by suitably trained personnel in accordance with the applicable code of practice.
- Opening of the device voids the type of protection.

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INSTRUCTIONS FOR SAFE USE

- It is recommended that confirmation of adequate sensor performance be conducted on a regular basis by means of a defined, sensor calibration procedure. The calibration frequency will depend upon the environment in which the sensor is operated.
- Certain substances are known to have cause cross interfering effects. Refer to applicable product datasheet for details.
- The iseries range of sensors are designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardize the safety of people and property. Use of the sensor outside of these parameters may result in inaccurate gas measurement and possible sensor damage.
- Excessive vibration and shock can result in mechanical breakage of the sensor.
- If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised.

Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials.

Suitable precautions: regular checks as part of routine inspections.

OPERATING RATINGS

iCO	0 ppm CO to 1000 ppm CO	Operating Voltage	3.30 Vdc ±0.3 Vdc
iH2S	0 ppm H ₂ S to 200 ppm H ₂ S	Max. Detector Operating Current	25 mA
iH2S HC	0 ppm H ₂ S to 2000 ppm H ₂ S	Max. Power Consumption	90 mW
iO2	0 % O ₂ to 25 % vol. O ₂	Operating Temperature Range (iCO, iH2S, iH2S HC, iO2)	-40°C to 60°C
iSO2	0 ppm SO ₂ to 20 ppm SO ₂	Operating Temperature Range (iSO2)	Continuous: -20°C to 50° Intermittent: -40°C to 55°
		Operating Pressure Range	600 mBar to 1200 mBar
		Operating Humidity Range (iCO, iH2S, iH2S HC, iO2)	5 %RH to 95 %RH non-condensing
		Operating Humidity Range (iSO2)	15 %RH to 90 %RH non-condensing

LIST OF APPLICABLE STANDARDS

- CENELEC EN 60079-0: 2018 – Explosive atmospheres – Part 0: Equipment. General requirements
- CENELEC EN 60079-11: 2012 – Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
- IEC 60079-0: 2017 – Explosive atmospheres – Part 0: Equipment. General requirements
- IEC 60079-11: 2011 – Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”

ENTITY PARAMETERS

U_i	5.88 Vdc
I_i	1.1 A
P_i	1.2 Watts
C_i	13.14 uF
L_i	0 uH

SCHEDULE OF LIMITATIONS (DENOTED BY U AFTER THE CERTIFICATE NUMBER)

- The sensor shall be supplied by an intrinsically safe supply coded Ex ia with a maximum output voltage of 5.88 V, a maximum output current of 1.1A, a maximum output power of 1.2 W and a minimum external capacitance of 13.14 μF.
- The component meets the temperature class T4 if the permitted range of the service temperature at the location of installation is -40°C to 60°C.
- The sensor shall be installed in an additional enclosure that provides a degree of ingress protection of IP20 or greater, according to the intended use and environmental conditions.
- When the sensor is installed in an enclosure containing other devices, care should be taken to ensure that the segregation between the circuit associated with the sensor and other circuits complies with IEC 60079-11:2011 as follows:
 - for terminals: clause 6.2.1 (facilities for connection to external circuits-Terminal).
 - for wiring: Table 5.

RETURN OF FAULTY PRODUCT

iseries electrochemical sensors are non-repairable products. Faulty products should be returned to the manufacturer address below, accompanied by the manufacturers Return Material Authorization form (found within the quality section of <https://sps.honeywell.com/gb/en/support/advanced-sensing-technologies>).

Manufacturer Address : City Technology Ltd.,
City Technology Centre,
Walton Road,
Portsmouth, Hampshire,
Great Britain, PO6 1SZ

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

FOR MORE INFORMATION

Honeywell Sensing and Safety Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit sps.honeywell.com/ast or call:

USA/Canada	+302 613 4491
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