



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx BAS 12.0025U Issue No: 0 Certificate history:  
Issue No. 0 (2013-08-14)

Status: **Current** Page 1 of 4

Date of Issue: **2013-08-14**

Applicant: **GE Intelligent Platforms**  
2500 Austin Drive  
Charlottesville  
Virginia 22911  
**United States of America**

Electrical Apparatus: **8202-HO-IS 8-Channel IS AO 4-20mA with HART & 8204-AO-IS 8-Channel  
IS AO 4-20mA**

*Optional accessory:*

Type of Protection: **Intrinsic Safety**

Marking: **[Ex ia Ga] IIC (-40°C ≤ Ta ≤ +70°C)**  
**[Ex ia Da] IIIC (-40°C ≤ Ta ≤ +70°C)**

*Approved for issue on behalf of the IECEx  
Certification Body:*

R S Sinclair

*Position:*

General Manager

*Signature:  
(for printed version)*

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**SGS Baseefa Limited**  
**Rockhead Business Park**  
**Staden Lane**  
**Buxton**  
**Derbyshire**  
**SK17 9RZ**  
**United Kingdom**





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Manufacturer: **GE Intelligent Platforms**  
2500 Austin Drive  
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Virginia 22911  
**United States of America**

Additional Manufacturing  
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

#### STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[GB/BAS/ExTR12.0030/00](#)

Quality Assessment Report:

[GB/FME/QAR11.0010/03](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The 8202-HO-IS, 8-Channel IS AO, 4-20mA with HART and 8204-AO-IS, 8-Channel IS AO, 4-20mA are designed to restrict the transfer of energy, from an input supply voltage of 18V, provided with galvanic isolation and voltage clamping with triplicated crowbar protection e.g. the 8920-PS-DC, I.S. System Power Supply, to eight galvanically isolated and independent intrinsically safe circuits, by the limitation of voltage and current. Any low energy let through transients from the power supply are limited by the module output zener diodes. These transients are not considered to affect component ratings or segregation.

Digital data is passed between the Hazardous Area and the Non-hazardous Area equipment, via power blocking circuitry within the module, to a data interface unit such as the 8922-RB-IS, Railbus Isolator.

The 8202-HO-IS, 8-Channel IS AO, 4-20mA with HART consists of electronic components on three printed circuit boards mounted within a moulded plastic enclosure. Each module has eight separate channels which are all referenced to a common electrical connection but will be considered as separate intrinsically safe circuits. Each channel is designed to provide an intrinsically safe circuit, for conventional 4-20mA HART compatible two wire equipment which may be situated within a hazardous area. The module supports "pass through" of the HART parameters, and data signals between the field devices and safe area apparatus, on the railbus data lines.

The 8204-AO-IS, 8-Channel IS AO, 4-20mA is of identical construction to the 8202-HO-IS but the HART Signalling is disabled in the firmware.

The non-hazardous area connections of the 8202-HO-IS, 8-Channel IS AO, 4-20mA with HART and 8204-AO-IS, 8-Channel IS AO, 4-20mA are made via a certified module carrier such as an 8720-CA-04 4?Module carrier or an 8729-CA-08 / 8727-CA-08 8?Module carrier and the hazardous area connections are made via certified IS field terminals such as the 8621-FT-IS Standard Field Terminals or the 8622-FT-IS Loop Disconnect Field Terminals.

See the additional sheet below for the Module's Schedule of Limitations.

**CONDITIONS OF CERTIFICATION: NO**



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## **EQUIPMENT (continued):**

The Schedule of Limitations

1) Each output channel must be considered as a separate intrinsically safe circuit which must be segregated from all other circuits by the requirements of Table 5 of IEC 60079-11: 2011 Ed 6

2) This module must be mounted with suitable connection facilities such that the output connectors are provided with a degree of protection of at least IP20.

3) Plugs and sockets for external connections must be designed such that incorrect connections or interchangeability with in-appropriate field connections is prevented.

4) This module must be segregated from any other Non-IS or IS circuits, by the requirements of Table 5 of IEC 60079-11: 2011 Ed 6.

See Annex for electrical parameters.

## **Annex:**

[IECEx BAS 12.0025U Annex.pdf](#)

**8202-HO-IS, 8-Channel IS AO, 4-20mA with HART and the 8204-AO-IS, 8-Channel IS AO, 4-20mA Module**

**Input Parameters**

CON2 Pins 1, 3-5, 10-12, 15 and 16.

$U_m = 18V$  (from the PSU)  
 The maximum prospective current must be limited to 85A.

CON2 Pins 13, 14, 17-22 and 31, 33 & 34.

$U_m = 18V$  (from the RBI)  
 The maximum input power must be limited to 2.5W.

All of the data lines between the module and the Railbus Isolator are diode blocked and/or opto-isolated to prevent power transfer from the module back onto the data lines.

Both the PSU and the Railbus Isolator supplies and the Railbus data signals are referenced to a common point within the Railbus Isolator to ensure that the galvanically isolated supplies are not additive.

**Output Parameters**

Channels 1 to 8 on Connectors CON5 and CON6 (Each Channel)

Channel	Output pins (+)	Output pins (-)	Channel	Output pins (+)	Output pins (-)
1	CON5, pin 7C	CON5, pin 7A	5	CON6, pin 7C	CON6, pin 7A
2	CON5, pin 5C	CON5, pin 5A	6	CON6, pin 5C	CON6, pin 5A
3	CON5, pin 3C	CON5, pin 3A	7	CON6, pin 3C	CON6, pin 3A
4	CON5, pin 1C	CON5, pin 1A	8	CON6, pin 1C	CON6, pin 1A

$$\begin{aligned}
 U_o &= 24.6V & C_i &= 0 \\
 I_o &= 93mA & L_i &= 0 \\
 P_o &= 0.57W
 \end{aligned}$$

The field outputs share a common rail between the four channels but are galvanically isolated from the PSU and Railbus Isolator supplies and the Railbus data signals.

**Load Parameters**

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the load connected to the output terminals must not exceed the following values:

GROUP	CAPACITANCE ( $\mu F$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu H/ohm$ )
IIC	0.116	4.3		64
IIB*	0.87	17.7		239
IIA	3.12	36		505

\* Group IIB parameters also applicable for associated apparatus [Ex ia Da] IIIC

Notes:

- 1) The above load parameters apply when one of the two conditions below is given:
  - the total  $L_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $L_o$  value or
  - the total  $C_i$  of the external circuit (excluding the cable) is  $< 1\%$  of the  $C_o$  value.
  
- 2) The above parameters are reduced to 50% when both of the two conditions below are given:
  - the total  $L_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $L_o$  value and
  - the total  $C_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $C_o$  value.

The reduced capacitance of the external circuit (including cable) shall not be greater than  $1\mu\text{F}$  for Groups IIB & IIA and  $600\text{nF}$  for Group IIC.