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EC-TYPE EXAMINATION CERTIFICATE

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**Component Intended for use on/in an Equipment or Protective System
Intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**

3

EC-Type Examination Certificate Number : **BAS01ATEX7346U**

4

Component: **8230-AI-IS, 8-CHANNEL IS ANALOGUE INPUT MODULE**

5

Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

6

Address: **Luton, Bedfordshire, LU1 3JJ**

7

This Component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8

The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

01(C)0441 dated 23 November 2001

9

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + Amds 1 & 2 EN 50020: 1994

except in respect of those requirements listed at item 18 of the Schedule.

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The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

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This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

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The marking of the component shall include the following:-

⊕ II (1) G [EEEx ia] IIC (-40°C ≤ T_a ≤ 70°C)

This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 0703/02/337

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.



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Schedule

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EC-TYPE EXAMINATION CERTIFICATE No. BAS01ATEX7346U

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Description of Component

The **8230-AI-IS, 8-Channel IS Analogue Input Module** is 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. Digital data is passed between the Hazardous Area and the Safe Area equipment, via power blocking circuitry within the module, to a data interface unit such as the 8922-RB-IS, Railbus Isolator.

The module 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 a three wire intrinsically safe circuit for equipment which may be situated within a hazardous area. The module provides data from the field devices to safe area apparatus on the railbus data lines.

The safe area connections of the 8230-AI-IS, 8-Channel IS Analogue Input Module are made via a certified module carrier such as an 8720-CA-04 4-Module carrier or an 8729-CA-08 8-Module carrier and the hazardous area connections are made via certified IS field terminals such as the 8623-FT-IS, IS Field Terminal 16 Channel DI.

Apparatus Parameters

Input Parameters

CON 2 Pins 1, 3-5, 10-12, 15 and 16.

$U_m = 18V$ (from the PSU)

The maximum prospective current must be limited to 85A.

CON 2 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 optocoupled 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.



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Output

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

All channels use 0V_A run as a separate wire, as a common connection for each channel.

Channel	VOUT*	VIN_*
1	Con 5, pin 7c	Con 6, pin 7c
2	Con 5, pin 7a	Con 6, pin 7a
3	Con 5, pin 5c	Con 6, pin 5c
4	Con 5, pin 5a	Con 6, pin 5a
5	Con 5, pin 3c	Con 6, pin 3c
6	Con 5, pin 3a	Con 6, pin 3a
7	Con 5, pin 1c	Con 6, pin 1c
8	Con 5, pin 1a	Con 6, pin 1a
0V_A	Con 5, pin 2a/c	Con 6, pin 2a/c
0V_A	Con 5, pin 6a/c	Con 6, pin 6a/c

$U_o = 15.75V$ $I_o = 20mA$ $P_o = 0.315W$ (Non-linear Output)
 $C_i = 0$ $L_i = 0$

The field outputs share a common rail for all the 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 in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.47	87.5		334
IIB	2.88	328		952
IIA	11.6	633		952

16

Report No.

01(C)0441



13 Schedule

14 EC-TYPE EXAMINATION CERTIFICATE No. BAS01ATEX7346U

17 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 4 of EN 50020:1994.
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 inappropriate field connections is prevented.
4. This module must be segregated from any other Non-IS or IS circuits, by the requirements of Table 4 of EN 50020: 1994.

18 Essential Health and Safety Requirements

There are no additional requirements other than those referred to in the standard.

19 DRAWINGS

Number	Sheet	Issue	Date	Description
CI8230	1 to 17	2	9.01	Circuit
CI8230-1	1 & 2	2	9.01	Parts list
CI8230-7	1	1	5.01	General Assembly
CI8230-3	1 & 2	2	9.01	Top 943/2 Sides1, 2 & Inner + Component Layout
CI8230-4	1 & 2	2	9.01	Mid 944/2 Sides1, 2 & Inner + Component Layout
CI8230-5	1 & 2	2	9.01	Bot 945/2 Sides1, 2 & Inner + Component Layout
CI8230-6	1	1	6.01	Marking PID
*CI8000-13	1 & 2	1	3.00	TFR313 Transformer
CI8230-8	1	2	9.01	Segregation Printed Circuit Board

* This drawing is held with BASEEFA Certificate No. BAS00ATEX2011U

This certificate may only be reproduced in its entirety and without any change, schedule included.

BASEEFA List Keywords
2ISOLBAR



SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

**Component Intended for use on/in an Equipment
Intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **BAS01ATEX7346U/1**
- 4 Component: **8230-AI-IS, 8 Channel IS Analogue Input Module**
- 5 Manufacturer: **Measurement Technology Limited**
- 6 Address: **Power Court, Luton, Bedfordshire, LU1 3JJ**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. BAS01ATEX7346U to apply to components designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

The original certificate was issued by The Electrical Equipment Certification Service, Notified Body Number 0600, which retains responsibility for its original documentation. Baseefa (2001) Ltd., Notified Body Number 1180, is responsible only for the additional work relating to this supplementary certificate and any other supplementary certificate it has issued.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. 0703

Project File No. 07/0135

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

Baseefa

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DIRECTOR
On behalf of
Baseefa (2001) Ltd.



13

Schedule

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Certificate Number BAS01ATEX7346U/1

15 **Description of the variation to the Component**

Variation 1.1

To permit: -

- i) the connection of an external, intrinsically safe, resistively-limited source of 28V, 300Ω, 93mA to Channels 1 to 8 Output terminals VIN_* w.r.t. 0V_A (CON6). When the source is connected to the terminals, the capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to the terminals must not exceed the values detailed in the certificate of the intrinsically safe source.
- ii) to permit minor changes to the label drawing not affecting the original assessment.

16 **Report Number**

None

17 **Schedule of Limitations**

None additional to those listed previously

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI8230-6	1	2	1.08	8230-AI-IS Certification Label Details – BASEEFA



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Component Intended for use on/in an Equipment**
3 **Intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate **See Schedule**
Number:

4 Component: **See Schedule**

5 Manufacturer: **GE Fanuc Intelligent Platforms**

6 Address: **Butterfield, Luton, LU2 8DL**

7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to components designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

This certificate may only be reproduced in its entirety, without any change, Schedule included.

Baseefa Customer Reference No. 6198

Project File No. 09/0581

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Schedule

Description of the variation to the Component

Certificate No.	Supplement No.	Component Type
BAS98ATEX7204U	9	8215-DO-IS, 4 Channel IS DO Solenoid Driver
BAS98ATEX7205U	9	8204-AO-IS, 8 Channel IS AO, 4-20 mA
BAS98ATEX7206U	6	8220-DI-IS, 16 Channel IS DI Switch / Proximity Detector
BAS98ATEX7207U	8	8201-HI-IS, 8 Channel IS AI, 4-20 mA with HART
BAS98ATEX7208U	6	8922-RB-IS, Railbus Isolator with Railbus Isolator Carrier
BAS98ATEX7209U	8	8920-PS-DC, IS System Power Supply, d.c. Input with Module Carrier
BAS98ATEX7210U	7	87XX Module Carriers
BAS98ATEX7211U	12	862X IS Field Terminal
BAS99ATEX7316U	6	8205-TI-IS, 8 Channel IS, Thermocouple Input Module 8206-TI-IS, 8 Channel IS, RTD Input Module
BAS00ATEX7202U	5	8223-PI-IS, 2-Channel Pulse Input Module
BAS01ATEX7185U	5	8202-HO-IS, 8 Channel IS AO, 4-20 mA with HART
BAS01ATEX7346U	2	8230-AI-IS, 8 Channel IS Analogue Input Module

Report No.

None

Schedule of Limitations

See original certificates

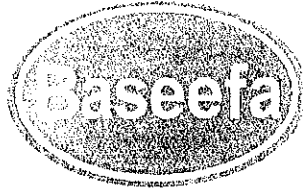
Essential Health and Safety Requirements

See original certificates

Drawings and Documents

Number	Sheet	Issue	Date	Description
CI 8200-15	1	1	07.09	Optional encapsulants and alternative address prefixes

Certificate Number
See Schedule



Issued 27 July 2010
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1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 Component Intended for use on/in an Equipment
Intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC

3 Supplementary EC - Type Examination Certificate Number: See Schedule

4 Component: See Schedule

5 Manufacturer: GE Intelligent Platforms
(formerly GE Fanuc Intelligent Platforms)

6 Address: 2500 Austin Drive, Charlottesville, Virginia 22911, USA
(formerly Butterfield, Luton, LU2 8DL)

7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to components designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

This certificate may only be reproduced in its entirety, without any change, Schedule included.



Baseefa Customer Reference No. 6623

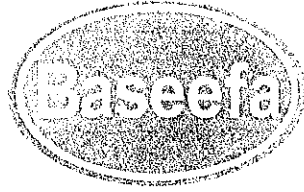
Project File No. 10/0571

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DIRECTOR
On behalf of
Baseefa



Schedule

Description of the variation to the Component

To permit minor label and drawing changes not affecting the original assessment.

Certificate No.	Supplement No.	Component Type
BAS98ATEX7205U	10	8204-AO-IS, 8 Channel IS AO, 4-20mA
BAS98ATEX7206U	7	8220-DI-IS, 16 Channel IS DI, Switch / Proximity Detector
BAS98ATEX7208U	7	8922-RB-IS, Railbus Isolator with Railbus Isolator Carrier
BAS98ATEX7210U	8	87XX Module Carriers
BAS99ATEX7316U	7	8205-TI-IS, 8 Channel IS, Thermocouple Input Module
BAS00ATEX7202U	6	8223-PI-IS, 2-Channel Pulse Input Module
BAS01ATEX7346U	3	8230-AI-IS, 8 Channel IS Analogue Input Module

Report No.

None

Schedule of Limitations

See original certificates

Essential Health and Safety Requirements

See original certificates

Drawings and Documents

Number	Sheet	Issue	Date	Description
CI8200-10	1 to 3	3	7.10	Revised Label information for 8000 2/1 Product made by GE Intelligent Platforms – Baseefa
CI 8200-15	1 of 1	2	7.10	Optional Encapsulants and Alternative Address Prefixes

The above drawings are held with BAS98ATEX7205U.