1 # EC - TYPE EXAMINATION CERTIFICATE

2 **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: **Baseefa09ATEX0184U**

4 Component: **937X-FB-**-** Fieldbus Barrier Module**

5 Manufacturer: **Measurement Technology Limited**

6 Address: **Luton, Bedfordshire.**

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

8 Baseefa, Notified Body number 1180, 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 Nos.
GB/BAS/ExTR09.0114/00 & GB/BAS/ExTR09.0115/00

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

EN 60079-0:2009 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-18:2004 EN 60079-27:2006

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

10 The sign "U" is placed after the certificate number. It 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.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified Component. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

12 The marking of the component shall include the following :

⟨Ex⟩ **II 2(1)G Ex d e ib mb [ia Ga] IIC T4 Gb (-40°C to +75°C)**

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

Baseefa Customer Reference No. **0703**

Project File No. **08/0459**

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.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

Baseefa
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601
e-mail info@baseefa.com web site www.baseefa.com
Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

13 **Schedule**

14 **Certificate Number Baseefa09ATEX0184U**

15 Description of Component

The 937X-FB-**-** Fieldbus Barrier Module comprises a Trunk Terminator Assembly, a 6 way or 12 way carrier assembly, one or two Barrier Modules, optionally a component certified Trunk Surge Module (part ref. 9376-SP), optionally a component certified Trunk Terminator (part ref. 9378-FT) and optionally up to twelve Spur Surge Modules (part ref. FS32).

The 6 way carrier assembly is normally associated with a single Barrier Module and the 12 way carrier is normally associated with two Barrier Modules.

The 937X-FB-**-** Fieldbus Barrier Module is designed to be supplied from a power supply conforming to IEC 61158 and produce 6 or 12 Spur outputs that are each compliant with the FISCO Power Supply requirements. The Spur outputs are isolated from the input supply but are not isolated from each other. Electrical connections are made via screw terminals.

Terminal Parameters - SPUR+ve Output Terminal and Shield Terminal w.r.t Spur-ve (each channel)

U_o	= 17.5V
$I_{o\ peak}$	= 248mA
$I_{o\ continuous}$	= 113mA
P_o	= 982mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

16 Report Number

GB/BAS/ExTR09.0114/00 & GB/BAS/ExTR08.0115/00

17 Schedule of Limitations

1 The component shall only be powered from supplies conforming to IEC 61158.

2 When a Trunk Surge Module is fitted, the power input circuit will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.

3 When one or more Spur Surge Modules are fitted, the spur outputs will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.

4 The component must be mounted in an appropriately certified enclosure when used in hazardous areas. When used in safe areas, the enclosure must provide ingress protection of at least IP20.

5 The Component is intended to meet the requirements for temperature class T4 when used within its certified temperature range.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI255TFR	1 & 2	1	01.10	3GFB Comms 3 Coil Co-Ax Trnfmr
CI9373-1	1 to 3	1	3.10	3GFB Stainless Steel Final Assembly
CI9377-1	1 to 6	1	3.10	3rd Generation Fieldbus Barrier Spur Control
CI9377-2	1 to 5	1	09/03/10	Barrier Spur Control PCB Assy
CI9377-3	1	1	1.10	Barrier Spur Control PCB Track Layout
CI9377-4	1 to 3	1	02.10	Barrier Spur Control PCB Assy
CI9377-5	1	1	3.10	3rd Generation Fieldbus Barrier PSU
CI9377-6	1 to 3	1	10/03/10	3GFB Barrier PSU PCB Parts List
CI9377-7	1	1	1.10	Barrier PSU PCB Track Layout
CI9377-8	1 & 2	1	3.10	Barrier PSU PCB Assy
CI9373-9 *	1	1	3.10	FB Barrier Case Marking
CI9381-1/1	1	1	5.09	Certification Drawing For Carrier 6W Simplex
CI9381-2	1	1	3.10	Parts List For Carrier 6W Simplex
CI9381-3	1	1	11.09	Carrier 6W Simplex PCB Track Layout
CI9381-4	1	1	11.09	Carrier 6W Simplex PCB Component Layout
CI9383-1/1	1	1	5.09	Certification Drawing For Carrier 12W Simplex
CI9383-2	1	1	3.10	Parts List For Carrier 12W Simplex
CI9383-3	1	1	11.09	Carrier 12W Simplex PCB Track Layout
CI9383-4	1 & 2	1	11.09	Carrier 12W Simplex PCB Component Layout
CI9384-4	1 to 4	1	2.10	TTA Assembly

These drawings are held with IECEx BAS 09.0081U, and except for the drawing marked * are also common to IECEx BAS09.0082X and Baseefa09ATEX0185X.

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:	**Baseefa09ATEX0184U/1**
4	Component:	**937X-FB-**-** Fieldbus Barrier Module**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Luton, Bedfordshire, LU2 8DL**

7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa09ATEX0184U 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.

Baseefa Customer Reference No. **0703**

Project File No. **10/0335**

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.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

13 **Schedule**

14 **Certificate Number Baseefa00ATEX0184U/1**

15 Description of the variation to the Component

Variation 1.1

To permit the introduction of 4 way and 8 way variants.

Variation 1.2

To permit minor mechanical and electrical changes.

16 Report Number

GB/BAS/ExTR10.0105/00

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
CI9373-1 *1	1 & 2	2	7.10	3GFB Stainless Steel Final Assembly
CI9373-2 *3	1 to 3	2	7.10	3GFB GRP Enclosure Final Assembly
CI9377-2 *1	1 to 5	2	20/04/10	Barrier Spur Control Parts List
CI9377-4 *1	1 to 3	2	04:10	Barrier Spur Control PCB Assy
CI9377-6 *1	1 to 3	2	20/04/10	3GFB Barrier PCB Parts List
CI9377-7 *1	1	2	27.4.10	Barrier PSU PCB Track Layout
CI9377-8 *1	1 & 2	2	4.10	Barrier PSU PCB Assy
CI9377-9 *2	1	2	4.10	FB Barrier Case Markings
CI9381-3 *1	1	2	4.10	Carrier 6W Simplex PCB Track Layout
CI9381-4 *1	1	2	4.10	Carrier 6W Simplex PCB Component Layout
CI9383-3 *1	1	2	4.10	Carrier 12W Simplex PCB Track Layout
CI9383-4 *1	1 & 2	2	4.10	Carrier 12W Simplex PCB Component Layout
CI9384-1 *1	1	1	4.10	TTA Wiring Diagram
CI9384-4 *1	1 to 3	2	4.10	TTA Assembly
CI9385-1/1 *1	1	1	4.10	Certification Drawing For Carrier 4W Simplex
CI9385-2 *1	1	1	4.10	Parts List For Carrier 4W
CI9385-3 *1	1	1	4.10	Carrier 4W PCB Track Layout
CI9385-4 *1	1	1	4.10	Carrier 4W PCB Component Layout

Number	Sheet	Issue	Date	Description
CI9386-1/1 *1	1	1	4.10	Certification Drawing For Carrier 8W Simplex
CI9386-2 *1	1	1	4.10	Parts List For Carrier 8W
CI9386-3 *1	1	1	4.10	Carrier 8W PCB Track Layout
CI9386-4 *1	1 & 2	1	4.10	Carrier 8W PCB Component Layout

Note *1 - These drawings are held with IECEx BAS 09.0081U issue 1 and are common to IECEx BAS 09.0082X issue 1 and Baseefa09ATEX0185X/1

Note *2 - This drawing is held with IECEx BAS 09.0081U issue 1.

Note *3 - This drawing is common to Baseefa09ATEX0185X/1.

1 # EC - TYPE EXAMINATION CERTIFICATE

2 **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: **Baseefa09ATEX0184U - Issue 2**

4 Component: **937X-FB-**-** Fieldbus Barrier Module**

5 Manufacturer: **Measurement Technology Limited**

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

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

8 Baseefa, Notified Body number 1180, 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 No's. **GB/BAS/ExTR10.0274/00**

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

EN 60079-0:2009 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-18:2009 EN 60079-27:2008

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

10 The sign "U" is placed after the certificate number. It 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.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified Component. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

12 The marking of the component shall include the following :

⟨Ex⟩ II 2(1)G Ex d e ib mb [ia Ga] IIC T4 Gb (-40°C to +75°C)

Baseefa Customer Reference No. **0703**

Project File No. **10/0618**

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.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

13 **Schedule**

14 **Certificate Number Baseefa09ATEX0184U - Issue 2**

15 **Description of Component**

The 937X-FB-**-** Fieldbus Barrier Module comprises a Trunk Terminator Assembly, a 6 way or 12 way carrier assembly, one or two Barrier Modules, optionally a component certified Trunk Surge Module (part ref. 9376-SP), optionally a component certified Trunk Terminator (part ref. 9378-FT) and optionally up to twelve Spur Surge Modules (part ref. FS32).

The 6 simplex way carrier assembly is normally associated with a single Barrier Module and the 12 way simplex and 6 way redundant carries are normally associated with two Barrier Modules.

4 way simplex and 8 way simplex variants also exist.

The 937X-FB-**-** Fieldbus Barrier Module is designed to be supplied from a power supply conforming to IEC 61158 and produce 6 or 12 Spur outputs that are each compliant with the FISCO Power Supply requirements. The Spur outputs are isolated from the input supply but are not isolated from each other. Electrical connections are made via screw terminals.

Terminal Parameters - SPUR+ve Output Terminal and Shield Terminal w.r.t Spur-ve (each channel)

9371 & 9373 Units - Simplex Models

U_o	= 17.5V
$I_{o\ peak}$	= 249.5mA
$I_{o\ continuous}$	= 113mA
P_o	= 982mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(μF)	(mH)		(μH/ohm)
IIC	0.339	0.57		32.5
IIB	1.97	2.28		130
IIA	8.2	4.57		260

The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

9372 - Redundant Models

U_o	= 16.4V
$I_{o\ peak}$	= 246mA
$I_{o\ continuous}$	= 215mA
P_o	= 912mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(μF)	(mH)		(μH/ohm)
IIC	0.424	0.59		35.2
IIB	2.51	2.35		140
IIA	10.0	4.70		281

The above load parameters apply where:

2. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

16 Report Number

GB/BAS/ExTR10.0275/00

17 Schedule of Limitations

1. The component shall only be powered from supplies conforming to IEC 61158.
2. When a Trunk Surge Module is fitted, the power input circuit will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
3. When one or more Spur Surge Modules are fitted, the spur outputs will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
4. The component must be mounted in an appropriately certified enclosure when used in hazardous areas. When used in safe areas, the enclosure must provide ingress protection of at least IP20.
5. The Component is intended to meet the requirements for temperature class T4 when used within its certified temperature range.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

New drawings submitted for this issue of certificate.

Number	Sheet	Issue	Date	Description
CI9373-1	1 to 3	4	1.12	3GFB Stainless Steel Final Assembly
CI9373-2	1 to 3	4	1.12	3GFB GRP Enclosure Final Assembly
CI9377-1	1 to 6	2	5.11	3rd Generation Fieldbus Barrier Spur Control
CI9377-2	1 to 3	3	15/11/11	R-Barrier Spur Control Parts List
CI9377-3	1	2	9.11	Barrier Spur Control PCB Track Layout
CI9377-4	1 to 3	3	5.11	Barrier Spur Control PCB Assy
CI9377-5	1 to 3	2	2.12	3rd Generation Fieldbus Barrier PSU
CI9377-5	1 to 3	3	2.12	3rd Generation Fieldbus Barrier PSU
CI9377-6	1 to 3	3	13/02/12	3GFB Barrier PCB Parts List
CI9377-6	1 to 3	5	13.2.12	3GFB Barrier PCB Parts List
CI9377-9	1	3	11.11	FB Barrier Markings
CI9381-1	1	2	3.11	Certification Drawing for Carrier 6W Simplex.
CI9381-2	1	2	10.11	Parts List for Carrier 6W Simplex
CI9381-3	1	3	3.11	Carrier 6W Simplex PCB Track Layout
CI9381-4	1	3	3.11	Carrier 6W Simplex PCB Component Layout
CI9382-1	1	3	11.11	Carrier 6W Redundant Final Assy.
CI9382-2	1	2	11.11	Parts List for Carrier 6Way Redundant
CI9382-3	1 & 2	2	11.11	Carrier 6 Spur Redundant PCB Track Layout
CI9382-4	1 & 2	2	11.11	Carrier 6-SP Red'nt PCB Component Layout
CI9383-1	1	2	3.11	Certification Drawing for Carrier 12W Simplex.
CI9383-2	1	2	10.11	Parts List for Carrier 6+6 Simplex
CI9383-3	1	3	3.11	Carrier 12W Simplex PCB Track Layout
CI9383-4	1 & 2	3	3.11	Carrier 12W Simplex PCB Component Layout

Current drawings also associated with this certificate.

Number	Sheet	Issue	Date	Description
CI255TFR	1 & 2	1	01.10	3GFB Comms 3 Coil Co-Ax Trnfmr
CI9377-7	1	2	27.4.10	Barrier PSU PCB Track Layout
CI9377-8	1 & 2	2	4.10	Barrier PSU PCB Assy
CI9384-1	1	1	4.10	TTA Wiring Diagram
CI9384-4	1 to 3	2	4.10	TTA Assembly
CI9385-1/1	1	1	4.10	Certification Drawing For Carrier 4W Simplex
CI9385-2	1	1	4.10	Parts List For Carrier 4W
CI9385-3	1	1	4.10	Carrier 4W PCB Track Layout
CI9385-4	1	1	4.10	Carrier 4W PCB Component Layout
CI9386-1/1	1	1	4.10	Certification Drawing For Carrier 8W Simplex
CI9386-2	1	1	4.10	Parts List For Carrier 8W
CI9386-3	1	1	4.10	Carrier 8W PCB Track Layout

Number	Sheet	Issue	Date	Description
CI9386-4	1 & 2	1	4.10	Carrier 8W PCB Component Layout

20 Certificate History

Certificate No.	Date	Comments
Baseefa09ATEX0184U	9 April 2010	The release of prime certificate. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR09.0114/00 & GB/BAS/ExTR09.0015/00.
Baseefa09ATEX0184U/1	9 July 2010	To permit the introduction of 4 way and 6 way variants.
Baseefa09ATEX0184U Issue 2	29 February 2012	To permit the introduction of the 9372 range of units, to permit electrical and mechanical changes including the introduction of revised terminal parameters, and to confirm that the current design has been assessed for compliance with the requirements of EN 60079-18:2009 edition 3 and EN 60079-27:2008 edition 2 including the revision of the component marking in accordance with these standards.
For drawings applicable to each issue, see original of that issue.		

1 # EC - TYPE EXAMINATION CERTIFICATE

2 **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:	**Baseefa09ATEX0184U - Issue 3**
4	Component:	**937X-FB-**-** Fieldbus Barrier Module**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Butterfield, Luton, LU2 8DL**

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

8 Baseefa, Notified Body number 1180, 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 No's. **GB/BAS/ExTR13.0110/00**

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

EN 60079-0:2009 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-18:2009 EN 60079-27:2008

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

10 The sign "U" is placed after the certificate number. It 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.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified Component. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

12 The marking of the component shall include the following :

Ex II 2(1)G Ex d e ib mb [ia Ga] IIC T4 Gb (-40°C to +75°C)

Baseefa Customer Reference No. **0703**

Project File No. **13/0091**

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pp Allan Ocock

R S SINCLAIR
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa00=9ATEX0184U - Issue 3**

15 Description of Component

The 937X-FB-**-** Fieldbus Barrier Module comprises a Trunk Terminator Assembly, a 6 way or 12 way carrier assembly, one or two Barrier Modules, optionally a component certified Trunk Surge Module (part ref. 9376-SP), optionally a component certified Trunk Terminator (part ref. 9378-FT) and optionally up to twelve Spur Surge Modules (part ref. FS32).

The 6 simplex way carrier assembly is normally associated with a single Barrier Module and the 12 way simplex and 6 way redundant carries are normally associated with two Barrier Modules.

4 way simplex and 8 way simplex variants also exist.

The 937X-FB-**-** Fieldbus Barrier Module is designed to be supplied from a power supply conforming to IEC 61158 and produce 6 or 12 Spur outputs that are each compliant with the FISCO Power Supply requirements. The Spur outputs are isolated from the input supply but are not isolated from each other. Electrical connections are made via screw terminals.

Terminal Parameters - SPUR+ve Output Terminal and Shield Terminal w.r.t Spur-ve (each channel)

9371 & 9373 Units - Simplex Models

U_o	= 17.5V
$I_{o\ peak}$	= 249.5mA
$I_{o\ continuous}$	= 113mA
P_o	= 982mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(μF)	(mH)		(μH/ohm)
IIC	0.339	0.57		32.5
IIB	1.97	2.28		130
IIA	8.2	4.57		260

The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

9372 - Redundant Models

U_o	= 16.4V
$I_{o\ peak}$	= 246mA
$I_{o\ continuous}$	= 215mA

P_o	= 912mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(μF)	(mH)		(μH/ohm)
IIC	0.424	0.59		35.2
IIB	2.51	2.35		140
IIA	10.0	4.70		281

The above load parameters apply where:

2. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

16 Report Number

GB/BAS/ExTR10.0275/00

17 Schedule of Limitations

1. The component shall only be powered from supplies conforming to IEC 61158.
2. When a Trunk Surge Module is fitted, the power input circuit will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
3. When one or more Spur Surge Modules are fitted, the spur outputs will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
4. The component must be mounted in an appropriately certified enclosure when used in hazardous areas. When used in safe areas, the enclosure must provide ingress protection of at least IP20.
5. The Component is intended to meet the requirements for temperature class T4 when used within its certified temperature range.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

New drawings submitted for this issue of certificate.

Number	Sheet	Issue	Date	Description
CI9373-1 *1	1 to 3	5	6.13	3GFB Stainless Steel Final Assembly

Note *1 - This drawing is held with IECEx BAS09.09.0081U issue 3, and is common with IECEx BAS 09.0082X issue 3, Baseefa09ATEX0184U issue 3 and Baseefa09ATEX0185X issue 4.

Current drawings also associated with this certificate.

Number	Sheet	Issue	Date	Description
CI255TFR *1	1 & 2	1	01.10	3GFB Comms 3 Coil Co-Ax Trnfmr
CI9373-2 *4	1 to 3	4	1.12	3GFB GRP Enclosure Final Assembly
CI9377-1 *4	1 to 6	2	5.11	3rd Generation Fieldbus Barrier Spur Control
CI9377-2 *4	1 to 3	3	15/11/11	R-Barrier Spur Control Parts List
CI9377-3 *4	1	2	9.11	Barrier Spur Control PCB Track Layout
CI9377-4 *4	1 to 3	3	5.11	Barrier Spur Control PCB Assy
CI9377-5 *4	1 to 3	2	2.12	3rd Generation Fieldbus Barrier PSU
CI9377-6 *4	1 to 3	3	13/02/12	3GFB Barrier PCB Parts List
CI9377-7 *2	1	2	27.4.10	Barrier PSU PCB Track Layout
CI9377-8 *2	1 & 2	2	4.10	Barrier PSU PCB Assy
CI9377-9 *3	1	3	11.11	FB Barrier Markings
CI9381-1 *4	1	2	3.11	Certification Drawing for Carrier 6W Simplex.
CI9381-2 *4	1	2	10.11	Parts List for Carrier 6W Simplex
CI9381-3 *4	1	3	3.11	Carrier 6W Simplex PCB Track Layout
CI9381-4 *4	1	3	3.11	Carrier 6W Simplex PCB Component Layout
CI9382-1 *4	1	3	11.11	Carrier 6W Redundant Final Assy.
CI9382-2 *4	1	2	11.11	Parts List for Carrier 6Way Redundant
CI9382-3 *4	1 & 2	2	11.11	Carrier 6 Spur Redundant PCB Track Layout
CI9382-4 *4	1 & 2	2	11.11	Carrier 6-SP Red'nt PCB Component Layout
CI9383-1 *4	1	2	3.11	Certification Drawing for Carrier 12W Simplex.
CI9383-2 *4	1	2	10.11	Parts List for Carrier 6+6 Simplex
CI9383-3 *4	1	3	3.11	Carrier 12W Simplex PCB Track Layout
CI9383-4 *4	1 & 2	3	3.11	Carrier 12W Simplex PCB Component Layout
CI9384-1 *2	1	1	4.10	TTA Wiring Diagram
CI9384-4 *2	1 to 3	2	4.10	TTA Assembly
CI9385-1/1 *2	1	1	4.10	Certification Drawing For Carrier 4W Simplex
CI9385-2 *2	1	1	4.10	Parts List For Carrier 4W
CI9385-3 *2	1	1	4.10	Carrier 4W PCB Track Layout
CI9385-4 *2	1	1	4.10	Carrier 4W PCB Component Layout
CI9386-1/1 *2	1	1	4.10	Certification Drawing For Carrier 8W Simplex
CI9386-2 *2	1	1	4.10	Parts List For Carrier 8W
CI9386-3 *2	1	1	4.10	Carrier 8W PCB Track Layout
CI9386-4 *2	1 & 2	1	4.10	Carrier 8W PCB Component Layout

Note *1 - This drawing is held with IECEx BAS09.09.0081U issue 0, and is common with IECEx BAS 09.0082X issue 0, Baseefa09ATEX0184U and Baseefa09ATEX0185X.

Note *2 - This This drawing is held with IECEx BAS09.09.0081U issue 1, and is common with IECEx BAS 09.0082X issue 1, Baseefa09ATEX0184U issue 1 and Baseefa09ATEX0185X issue 1.

Note *3 - This drawing is held with IECEx BAS09.09.0081U issue 2, and is common with Baseefa09ATEX0184U issue 2.

Note *4 - This drawing is held with IECEx BAS09.09.0081U issue 2, and is common with IECEx BAS 09.0082X issue 2, Baseefa09ATEX0184U issue 2 and Baseefa09ATEX0185X issue 3.

20 Certificate History

Certificate No.	Date	Comments
Baseefa09ATEX0184U	9 April 2010	The release of prime certificate. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR09.0114/00 & GB/BAS/ExTR09.0015/00.
Baseefa09ATEX0184U/1	9 July 2010	To permit the introduction of 4 way and 6 way variants.
Baseefa09ATEX0184U Issue 2	29 February 2012	To permit the introduction of the 9372 range of units, to permit electrical and mechanical changes including the introduction of revised terminal parameters, and to confirm that the current design has been assessed for compliance with the requirements of EN 60079-18:2009 edition 3 and EN 60079-27:2008 edition 2 including the revision of the component marking in accordance with these standards.
Baseefa09ATEX0184U Issue 3	21 June 2013	To permit drawing changes relating to the 3GFB Equipment certificates that do not affect the existing assessment of the 3GFB component.
For drawings applicable to each issue, see original of that issue.		

1 # EC - TYPE EXAMINATION CERTIFICATE

2 **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: **Baseefa09ATEX0184U - Issue 4**

4 Component: **937X-FB-**-** Fieldbus Barrier Module**

5 Manufacturer: **Measurement Technology Limited**

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

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

8 Baseefa, Notified Body number 1180, 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 No's. **GB/BAS/ExTR16.0089/00**

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

EN 60079-0:2009 EN 60079-1:2007 EN 60079-7:2007 EN 60079-11:2007 EN 60079-18:2009 EN 60079-27:2008

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

10 The sign "U" is placed after the certificate number. It 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.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified Component. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

12 The marking of the component shall include the following :

(Ex) II 2(1)G Ex d e ib mb [ia Ga] IIC T4 Gb (-40°C to +75°C)

Baseefa Customer Reference No. **0703** Project File No. **16/0212**

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R S SINCLAIR pp Alan Cogan
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa09ATEX0184U - Issue 4**

15 Description of Component

The 937X-FB-**-** Fieldbus Barrier Module comprises a Trunk Terminator Assembly, a 6 way or 12 way carrier assembly, one or two Barrier Modules, optionally a component certified Trunk Surge Module (part ref. 9376-SP), optionally a component certified Trunk Terminator (part ref. 9378-FT) and optionally up to twelve Spur Surge Modules (part ref. FS32).

The 6 simplex way carrier assembly is normally associated with a single Barrier Module and the 12 way simplex and 6 way redundant carries are normally associated with two Barrier Modules.

4 way simplex and 8 way simplex variants also exist.

The 937X-FB-**-** Fieldbus Barrier Module is designed to be supplied from a power supply conforming to IEC 61158 and produce 6 or 12 Spur outputs that are each compliant with the FISCO Power Supply requirements. The Spur outputs are isolated from the input supply but are not isolated from each other. Electrical connections are made via screw terminals.

Terminal Parameters - SPUR+ve Output Terminal and Shield Terminal w.r.t Spur-ve (each channel)

9371 & 9373 Units - Simplex Models

U_o	= 17.5V
$I_{o\ peak}$	= 249.5mA
$I_{o\ continuous}$	= 113mA
P_o	= 982mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(µF)	(mH)		(µH/ohm)
IIC	0.339	0.57		32.5
IIB	1.97	2.28		130
IIA	8.2	4.57		260

The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

9372 - Redundant Models

U_o	= 16.4V
$I_{o\ peak}$	= 246mA
$I_{o\ continuous}$	= 215mA
P_o	= 912mW
U_i	= 17.5V
C_i	= 0
L_i	= 0

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals TB1 must not exceed the following values:

GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
	(µF)	(mH)		(µH/ohm)
IIC	0.424	0.59		35.2
IIB	2.51	2.35		140
IIA	10.0	4.70		281

The above load parameters apply where:

2. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

or 2. The inductance and capacitance are distributed as in a cable.

or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

16 Report Number

GB/BAS/ExTR16.0089/00

17 Schedule of Limitations

1. The component shall only be powered from supplies conforming to IEC 61158.
2. When a Trunk Surge Module is fitted, the power input circuit will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
3. When one or more Spur Surge Modules are fitted, the spur outputs will not withstand a 500V a.c. isolation test to earth. This must be taken into account during installation.
4. The component must be mounted in an appropriately certified enclosure when used in hazardous areas. When used in safe areas, the enclosure must provide ingress protection of at least IP20.
5. The Component is intended to meet the requirements for temperature class T4 when used within its certified temperature range.

18 Essential Health and Safety Requirements

As follows, in addition to those covered by the standards at item 9.

Clause	Subject	Compliance
1.4.1	External effects	To be addressed by the user instructions.
1.4.2	Aggressive substances, etc.	To be addressed by the user instructions.

19 Drawings and Documents

New drawings submitted for this issue of certificate.

Number	Sheet	Issue	Date	Description
CI9373-1 *1	1 to 3	7	6.13	3GFB Stainless Steel Final Assembly

Note *1 - This drawing is held with IECEx BAS09.09.0081U issue 4, and is common with IECEx BAS 09.0082X issue 4, Baseefa09ATEX0184U issue 4 and Baseefa09ATEX0185X issue 5.

Current drawings also associated with this certificate.

Number	Sheet	Issue	Date	Description
CI255TFR *1	1 & 2	1	01.10	3GFB Comms 3 Coil Co-Ax Trnfmr
CI9373-2 *4	1 to 3	4	1.12	3GFB GRP Enclosure Final Assembly
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CI9377-2 *4	1 to 3	3	15/11/11	R-Barrier Spur Control Parts List
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CI9377-4 *4	1 to 3	3	5.11	Barrier Spur Control PCB Assy
CI9377-5 *4	1 to 3	2	2.12	3rd Generation Fieldbus Barrier PSU
CI9377-6 *4	1 to 3	3	13/02/12	3GFB Barrier PCB Parts List
CI9377-7 *2	1	2	27.4.10	Barrier PSU PCB Track Layout
CI9377-8 *2	1 & 2	2	4.10	Barrier PSU PCB Assy
CI9377-9 *3	1	3	11.11	FB Barrier Markings
CI9381-1 *4	1	2	3.11	Certification Drawing for Carrier 6W Simplex.
CI9381-2 *4	1	2	10.11	Parts List for Carrier 6W Simplex
CI9381-3 *4	1	3	3.11	Carrier 6W Simplex PCB Track Layout
CI9381-4 *4	1	3	3.11	Carrier 6W Simplex PCB Component Layout
CI9382-1 *4	1	3	11.11	Carrier 6W Redundant Final Assy.
CI9382-2 *4	1	2	11.11	Parts List for Carrier 6Way Redundant
CI9382-3 *4	1 & 2	2	11.11	Carrier 6 Spur Redundant PCB Track Layout
CI9382-4 *4	1 & 2	2	11.11	Carrier 6-SP Red'nt PCB Component Layout
CI9383-1 *4	1	2	3.11	Certification Drawing for Carrier 12W Simplex.
CI9383-2 *4	1	2	10.11	Parts List for Carrier 6+6 Simplex
CI9383-3 *4	1	3	3.11	Carrier 12W Simplex PCB Track Layout
CI9383-4 *4	1 & 2	3	3.11	Carrier 12W Simplex PCB Component Layout
CI9384-1 *2	1	1	4.10	TTA Wiring Diagram
CI9384-4 *2	1 to 3	2	4.10	TTA Assembly
CI9385-1/1 *2	1	1	4.10	Certification Drawing For Carrier 4W Simplex
CI9385-2 *2	1	1	4.10	Parts List For Carrier 4W
CI9385-3 *2	1	1	4.10	Carrier 4W PCB Track Layout
CI9385-4 *2	1	1	4.10	Carrier 4W PCB Component Layout
CI9386-1/1 *2	1	1	4.10	Certification Drawing For Carrier 8W Simplex
CI9386-2 *2	1	1	4.10	Parts List For Carrier 8W
CI9386-3 *2	1	1	4.10	Carrier 8W PCB Track Layout
CI9386-4 *2	1 & 2	1	4.10	Carrier 8W PCB Component Layout

Note *1 - This drawing is held with IECEx BAS09.09.0081U issue 0, and is common with IECEx BAS 09.0082X issue 0, Baseefa09ATEX0184U and Baseefa09ATEX0185X.

Note *2 - This This drawing is held with IECEx BAS09.09.0081U issue 1, and is common with IECEx BAS 09.0082X issue 1, Baseefa09ATEX0184U issue 1 and Baseefa09ATEX0185X issue 1.

Note *3 - This drawing is held with IECEx BAS09.09.0081U issue 2, and is common with Baseefa09ATEX0184U issue 2.
Note *4 - This drawing is held with IECEx BAS09.09.0081U issue 2, and is common with IECEx BAS 09.0082X issue 2, Baseefa09ATEX0184U issue 2 and Baseefa09ATEX0185X issue 3.

20 Certificate History

Certificate No.	Date	Comments
Baseefa09ATEX0184U	9 April 2010	The release of prime certificate. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR09.0114/00 & GB/BAS/ExTR09.0015/00.
Baseefa09ATEX0184U/1	9 July 2010	To permit the introduction of 4 way and 6 way variants.
Baseefa09ATEX0184U Issue 2	29 February 2012	To permit the introduction of the 9372 range of units, to permit electrical and mechanical changes including the introduction of revised terminal parameters, and to confirm that the current design has been assessed for compliance with the requirements of EN 60079-18:2009 edition 3 and EN 60079-27:2008 edition 2 including the revision of the component marking in accordance with these standards.
Baseefa09ATEX0184U Issue 3	21 June 2013	To permit drawing changes relating to the 3GFB Equipment certificates that do not affect the existing assessment of the 3GFB component. The associated test and assessment is documented in Test Report GB/BAS/ExTR10.0275/00 for project 13/0091
Baseefa09ATEX0184U Issue 4	22 March 2016	To permit drawing changes relating to the 3GFB Equipment certificates that do not affect the existing assessment of the 3GFB component. The associated test and assessment is documented in Test Report GB/BAS/ExTR16.0089/00 for project 16/0212.
For drawings applicable to each issue, see original of that issue.		