



1 **TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 05ATEX4046X** Issue: **5**

4 Equipment: **Model W40135 Flow Computer and  
W40203 Foundation Fieldbus Controller Assembly**

5 Applicant: **Bristol, Inc. dba Remote Automation Solutions**

Address: 1100 Buckingham Street (For other manufacturing sites, see certificate schedule)  
Watertown  
Connecticut 06795  
USA

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

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 3 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 50014:1997 plus amendments A1 and A2 EN 60079-15:2003

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:



II 3 G  
EEx nA IIC T4 (T<sub>a</sub> = -40°C to +75°C)

Project Number 29988

C Ellaby  
Deputy Certification Manager

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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The Model W40135 Flow Computer is a microprocessor-based controller that provides the functions required for a variety of field automation applications. The controller is used for applications requiring general logic and sequencing control, historical data archiving, multiple communication ports, PID control and flow measurements on up to twelve metre runs.

The unit consists of the main enclosure containing a fixed backplane (there are three options) with an integral card-cage that can accommodate:

- i: A Power Supply Module
- ii: Up to 27 I/O and Communications Cards
- iii: W48071 CPU or W48093 Series 2 CPU & W28142 License Key
- iv: W48088 Foundation Fieldbus Interface CPU

All the cards communicate with each other on a common SPI bus. Empty slots are covered by blanks secured to the enclosure with screws and moulded from the same material as the enclosure.

The five possible backplanes are:

- i: W48072 ROC 809 Backplane
- ii: W38263 ROC 827 Backplane
- iii: W38266 ROC 827 Expansion Backplane
- iv: W48090 ROC 827 Backplane, Series 2
- v: W48091 ROC 827 Expansion Backplane, Series 2

The unit has a number of power module options:

- i: Nominal 12 Vdc Input Module (W38185 PS-DC-12)
- ii: Nominal 24 Vdc Input Module (W38245 PS-DC-24)
- iii: Solar Power Module (W38187 PS-Solar)

The unit has the following i/o module options:

- i: W38189 5-Channel J/K Thermocouple Input Module (TC)
- ii: W38191 5-Point Relay Output Module (DO-R)
- iii: W38193 5-Point Digital Output Module (DO)
- iv: W38195 8-Point Digital Input Module (DI)
- v: W38197 16-Bit Pulse Input Module (PI)
- vi: W38201 12-Bit Quad Analog Input Module (AI-12)
- vii: W38203 16-Bit Quad Analog Input Module (AI-16)
- viii: W38205 2-Point 16-Bit RTD Input Module (RTD)
- ix: W38269 AO High
- x: W38207 Multi-Variable Sensor (MVS)
- xi: W38257 APM
- xii: W38272 APM Daughter Board
- xiii: W38304 MVS I/O Module
- xiv: W48089 AC I/O Module
- xv: W48094 16 Bit Quad analogue Input Module
- xvi: W48097 Hart Module
- xvii: W28161X0012 FF H1 Module
- xviii: W28161X0022 FF H1 Power Module
- xix: W38366 Thermocouple Personality Board, Series 2
- xx: W38350 DO Relay Personality Board, Series 2
- xxi: W38351 RTD Input Personality Board, Series 2
- xxii: W48095 I/O Base Board, use with TC, DO Relay and RTD Series 2 Personality Boards

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The unit has the following communication module options:

- i: W38211 EIA-232 (RS-232C)
- ii: W38209 EIA-422/EIA-485 (RS-422/RS-485)
- iii: W38213 Dial-Up Modem
- iv: W38251 Max Stream Radio (900 MHz and 2.4 GHz)
- v: W38260 Hart
- vi: W38275 Hart Daughter Board
- vii: Smart Wireless
- viii: W48095 MVS I/O Module

The enclosure offers a degree of ingress protection in excess of IP20 but is designed to be installed in a suitably-approved housing in the hazardous area.

#### Other Manufacturing Sites

Micro Motion Inc, 7070 Winchester Circle, Boulder, Colorado, USA.

Fromex S. A. de C. V., A Division of Emerson Process Management, Aveinida Industrias No 6025, Zd 88275 Nueva Laredo, Tamaulipas, Mexico.

**Variation 1** - This variation introduced the following changes:

- i. A new Smart Wireless option was introduced.
- ii. Text amendments were recognised on GA drawing W40135; these amendments indicate changes to the internal designation.

**Variation 2** - This variation introduced the following changes:

- i. The addition of the Series 2 CPU backplane, expansion backplane and CPU module, also, I/O modules AC I/O and MVS I/O were included.
- ii. Modifications of the existing circuit were recognised.
- iii. Minor text changes on drawings were introduced.

**Variation 3** - This variation introduced the following changes:

- i. The following items were added to the Model W40135 Flow Computer to form the W40203 Foundation Fieldbus Controller Assembly, the Description of Equipment being amended accordingly:
  - W48088 Foundation Fieldbus Interface CPU
  - W48094 16 Bit Quad analogue Input Module
  - W48097 Hart Module
  - W28161X0012 FF H1 Module
  - W28161X0022 FF H1 Power Module
  - W48095 MVS I/O Module
- ii. The recognition of minor design changes and the amendment of a condition of certification.

**Variation 4** - This variation introduced the following changes:

- i. The inclusion of a new TC, DO Relay, RTD and RS-485 Application Modules for model W40135, as detailed below, the Description of Equipment being amended accordingly:
  - W38366 Thermocouple Personality Board, Series 2
  - W38350 DO Relay Personality Board, Series 2

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### Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900  
Fax: +44 (0) 1244 681330  
Email: [info@siracertification.com](mailto:info@siracertification.com)  
Web: [www.siracertification.com](http://www.siracertification.com)



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- W38351 RTD Input Personality Board, Series 2
  - W48095 I/O Base Board, use with TC, DO Relay and RTD Series 2 Personality Boards
- ii. The existing circuit was modified.
  - iii. New drawings were added and minor changes to existing drawings were introduced.
  - iv. The recognition of a change of company name from Fisher Controls, 1612 South 17<sup>th</sup> Avenue, Marshalltown, Iowa to Bristol Inc., 1100 Buckingham Street, Watertown, Connecticut.

**Variation 5** - This variation introduced the following changes:

- i. The addition of a new IEC 62591 WiHart Module, part number: 397203-01-2.
- ii. The recognition of a change of company name from Bristol Inc to Bristol, Inc. dba Remote Automation Solutions.
- iii. The addition of the following manufacturing location, Fromex S. A. de C. V., A Division of Emerson Process Management, Aveinida Industrias No 6025, Zd 88275 Nueva Laredo, Tamaulipas, Mexico.
- iv. A Special Condition for Safe Use was introduced.

## 14 DESCRIPTIVE DOCUMENTS

### 14.1 Drawings

Refer to Certificate Annexe.

### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	20 September 2005	R52A12665A	The release of the prime certificate.
1	30 November 2007	R52A17539A	This Issue covers the following changes: <ul style="list-style-type: none"><li>• All previously issued certification was rationalised into a single certificate, Issue 1, Issues 0 referenced above is only intended to reflect the history of the previous certification and has not been issued as a document in this format.</li><li>• The introduction of Variation 1.</li></ul>
2	9 December 2008	R52L19259A	The introduction of Variation 2, as a result, the description was revised.
3	25 February 2010	R21055A/00	The introduction of Variation 3.
4	03 February 2012	R25979A/00	The introduction of Variation 4.
5	21 June 2013	R29988A/00	The introduction of Variation 5.

## 15 SPECIAL CONDITIONS FOR SAFE USE

- 15.1 The equipment shall be fitted in an IP54 or better enclosure or be installed in an equivalent location. Any enclosure shall be suitably-certified or otherwise approved for the zone of use (zone 2).
- 15.2 The user/installer shall ensure that the rated input voltage is not exceeded in service.
- 15.3 The USB connectors must not be used when the equipment is operated in a hazardous zone.

## 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed reports listed in Section 14.2.

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17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of Type Examination Certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The information regarding fuse replacement shall be marked adjacent to fuse holder F1 on boards PS-DC and PS-Solar.
- 17.4 The following +24/+12 voltage selector jumpers shall be conformally coated to secure them in place:

Jumper #	Board #
J4	AO-16

Jumper #	Board #
J4	AI-12
J3	AI-16 W38203X0012

Jumper #	Board #
J4	PI
J4	AI-16 W48094X0012

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# Certificate Annexe

Certificate Number: Sira 05ATEX4046X  
 Component: Model W40135 Flow Computer and W40203 Foundation Fieldbus Controller Assembly  
 Applicant: Bristol, Inc. dba Remote Automation Solutions



Issue 1 The drawings associated with Issue 0 were replaced by those listed in Issue 1

Number	Sheet	Rev.	Date	Description
7FSC1001	1 to 3	F	20 Jul 05	Schematic – DI module
7FSC1002	1 to 2	F	20 Jul 05	Schematic – DO module
7FSC1003	1 to 2	G	20 Jul 05	Schematic – DO-R module
7FSC1004	1 to 3	D1	20 Jul 05	Schematic – AI-12 module
7FSC1019	1 to 6	L4	28 Nov 07	Schematic – CPU module
7FSC1020	1 to 6	J	20 Jul 05	Schematic – ROC 809 backplane
7FSC1024	1 to 4	G1	20 Jul 05	Schematic – AI16 module
7FSC1027	1 to 2	H	20 Jul 05	Schematic – RS485/MVS module
7FSC1028	1 to 2	D1	20 Jul 05	Schematic – PI module
7FSC1029	1 to 4	F	15 Aug 05	Schematic – TC module
7FSC1030	1 to 2	D	20 Jul 05	Schematic – RS-232C module
7FSC1031	1 to 5	H	20 Jul 05	Schematic – RTD module
7FSC1034	1 to 3	E	20 Jul 05	Schematic – dial-up modem module
7FSC1036	1 to 3	H	15 Aug 05	Schematic – 12V power supply module
7FSC1037	1 to 3	E	20 Jul 05	Schematic – solar power supply daughter board
7FSC1044	1 to 3	C1	28 Nov 07	Schematic – solar power supply main board
7FSC1045	1 to 6	E1	28 Nov 07	Schematic – ROC 827 backplane
7FSC1046	1 to 5	D2	28 Nov 07	Schematic – ROC 827 expansion backplane
7FSC1047	1 to 4	D	15 Aug 05	Schematic – AO High module
7FSC1048	1 to 4	G	28 Nov 07	Schematic – HART module
7FSC1050	1 to 3	E	20 Jul 05	Schematic – HART daughter board
7FSC1054	1 to 4	D2	28 Nov 07	Schematic – prover module
7FSC1055	1 to 3	C	28 Nov 07	Schematic – prover daughter board
W28142	1 of 1	B	20 Jul 05	PCB assembly, license key
W28152	1 of 1	A	20 Jul 05	Schematic – 24V power supply module
W28156	1 of 1	2	20 Jul 05	Schematic – max stream radio module
W28160	1 of 1	A	28 Nov 07	Schematic – Smart Wireless interface board
W40135	1 to 2	D	28 Nov 07	General assembly and marking
W40163	1 of 1	A	28 Nov 07	Assembly - Smart Wireless

## Issue 2

Number	Sheet	Rev.	Date (Sira Stamp)	Description
7FSC1019	1 to 6	L5	02 Dec 08	Schematic – CPU Module
7FSC1024	1 to 4	G2	02 Dec 08	Schematic – AI16 module
7FSC1029	1 to 4	K1	02 Dec 08	Schematic – TC module
7FSC1048	1 to 4	G2	02 Dec 08	Schematic – HART module
7FSC1050	1 to 3	E2	02 Dec 08	Schematic – HART daughter board
7FSC1055	1 to 3	C1	02 Dec 08	Schematic – Prover daughter board
W40135	1 to 2	F	02 Dec 08	General assembly and marking
W40163	1 of 1	D	02 Dec 08	Assembly – Smart Wireless
W38286	1 to 4	C1	02 Dec 08	Schematic – AC I/O main PCB sub-assembly
W38294	1 to 2	C1	02 Dec 08	Schematic – AC I/O daughter PCB sub-assembly
W38331	1 to 5	D1	02 Dec 08	Schematic – MVS I/O module
7FSC1061	1 to 3	C	02 Dec 08	Schematic – ROC827 backplane, series 2

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Number	Sheet	Rev.	Date (Sira Stamp)	Description
7FSC1062	1 to 4	B2	02 Dec 08	Schematic – ROC827 expansion backplane, series 2
7FSC1059	1 to 5	E1	02 Dec 08	Schematic – CPU module, series 2

### Issue 3

Number	Sheet	Rev.	Date (Sira Stamp)	Description
W40203	1	A	04 Feb 10	Model W40203 FFI certification drawing
W38345	9	D	04 Feb 10	Schematic, FFBUS INT CPU module
W38340	2	A	04 Feb 10	Schematic, FF H1 module and PWR module
7FSC1065	3	B1	04 Feb 10	Schematic, Analog input module
W38331	5	E1	04 Feb 10	Schematic, MVS I/O module
W38353	9	A1	04 Feb 10	Schematic, HART Module
W40135	4	G	04 Feb 10	Model W40135 certification drawing
7FSC1003	2	H	04 Feb 10	Schematic - DO-R

### Issue 4

Number	Sheets	Rev.	Date (Sira stamp)	Title
7FSC1067	1 to 3	A	16 Jan 12	Schematic, AI-12 Module
7FSC1069	1 & 2	B	16 Jan 12	Schematic, PI Module
7FSC1070	1 to 4	A	16 Jan 12	Schematic, AO High Module
W28163	1 to 5	A	16 Jan 12	Schematic, Thermocouple Personality Board, Series 2
W38331	1 to 7	H1	16 Jan 12	Schematic, MVS I/O and I/O Base Board for RS-485 Appl, TC, DO Relay and RTD Series 2 modules
W38342	1 of 1	B	16 Jan 12	Schematic, DO Relay Personality Board, Series 2
W38343	1 & 2	B2	16 Jan 12	Schematic, RTD Relay Personality Board, Series 2
W40135	1 of 4	K	03 Feb 12	Model W40135 certification drawing
W40135	2 of 4	H	03 Feb 12	Model W40135 certification drawing
W40135	3 of 4	H	03 Feb 12	Model W40135 certification drawing
W40135	4 of 4	D	03 Feb 12	Model W40135 certification drawing

### Issue 5

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
400181-00-2	0 of 8	C	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	1 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	2 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	3 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	4 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	5 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	6 of 8	D	27 Apr 13	WiHART CPU(Schematic)
400181-00-2	7 of 7	D	27 Apr 13	WiHART CPU(Schematic)
400181-01-0	1 to 7	A	27 Apr 13	BOM WiHART CPU
400181-75-4	1 of 1	B	27 Apr 13	PCB ASSEMBLY, WiHART Module
400189-00-3	1 of 1	A	27 Apr 13	ROC/FB/SWM WiHART USB BOARD
397203-01-2	1 of 1	A	27 Apr 13	ROC 800 WiHART MODULE
W40135	1 of 4	L	27 Apr 13	Model W40135 ROC800 flow computer
W40135	2 of 4	H	27 Apr 13	Model W40135 ROC800 flow computer

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Applicant: Bristol, Inc. dba Remote Automation  
Solutions



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Drawing	Sheets	Rev.	Date (Sira stamp)	Title
W40135	3 of 4	H	27 Apr 13	Model W40135 ROC800 flow computer
W40135	4 of 4	E	27 Apr 13	Model W40135 ROC800 flow computer

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