



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

Certificate No.:	IECEx BVS 05.0014X	issue No.:2	Certificate history:.....
Status:	Current		
Date of Issue:	2007-05-14	Page 1 of 6	
Applicant:	Micro Motion, Inc. Boulder, Co. 80301 United States of America		
Electrical Apparatus: <i>Optional accessory:</i>	Transmitter type 24**S*****3****		
Type of Protection:	Electrical apparatus for explosive gas atmospheres		
Marking:	Ex nAC II T5		
<i>Approved for issue on behalf of the IECEx Certification Body:</i>	Dr. R. Jockers		
<i>Position:</i>	Head of Certification Body		
<i>Signature: (for printed version)</i>	_____		
<i>Date:</i>	_____		

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:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany







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Manufacturer: **Micro Motion, Inc.**
Boulder, Co. 80301
United States of America

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 manufacture'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 60079-15 : 2005-03 Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
Edition: Ed 3

*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:

[DE/BVS/ExTR05.0001/00](#)
[DE/BVS/ExTR05.0001/01](#)
[DE/BVS/ExTR05.0001/02](#)

Quality Assessment Report:

[NO/DNV/QAR07.0002/00](#)
[NO/DNV/QAR07.0003/00](#)
[NO/DNV/QAR07.0004/00](#)





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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Product description

The transmitter is a built-on unit; only the assemblage of the transmitter and an appropriate sensor guarantees the necessary degrees of protection. The metallic enclosure of the transmitter is designed to incorporate the electronics and is constructed to mount directly to a sensor unit. It is fixed to the sensor using a mechanical clamp.

The electronics consists of two circuit boards encapsulated into a potting shell and a user interface module attached to the encapsulated assembly by two mounting screws. The transmitter has two sets of terminals, a power terminal with two clamps and a signal terminal with four clamps. A plastic wall separates the terminals. A 9-wire cable assembly makes the electrical connection of the sensor.

The metallic enclosure has two threaded holes for cable or conduit entries to install the power supply and signal cables.

CONDITIONS OF CERTIFICATION: YES as shown below:

Special conditions for safe use

- The permissible ambient temperature range for the transmitter is -40 °C up to +60 °C. The use of the transmitter at an ambient temperature under -20 °C is only admissible, if the cables and cable entries or conduit entries are suitable for that temperature and use.

- The permissible service temperature for the sealed relay is +75 °C. It must be assured that the relay service temperature does not exceed +75 °C due to the process temperature and the sensor used (see instruction of the sensor).

- The cable entries or conduit entries shall have a degree of protection of at least IP54.

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- The user interface module must not be disconnected from the encapsulated assembly unless the unit has been de-energized.

- The DIP-switch SW1 must not be switched unless the unit has been de-energized.





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EQUIPMENT(continued):

Parameters

Power supply

Rated voltage (terminals 1- 2 (J1))	DC	18...100	V
	AC	85...250	V

Output/input circuits

mA output (active or passive), (terminals 1- 2 (J2))

Voltage	DC	30	V
Current		4...20	mA

Frequency/pulse (active or passive), (terminals 1- 2 (J3))

Voltage	DC	30	V
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Discrete output (active or passive), (terminals 1- 2 (J3))

Voltage	DC	30	V
Current	max.	500	mA

Discrete output (active or passive), (terminals 1- 2 (J3))

Voltage	DC	30	V
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Sensor circuits

Drive circuit (pin connection 7 - 8)

Voltage	DC	12,36	V
Current		0,075	A

Pick-Off coil (pin connection 3 - 4 and 5 - 6)

Voltage	DC	3,3	V
Current		27	μ A

Temperature circuit (pin connection 1, 2 and 9)

Voltage	DC	2,5	V
Current		370	μ A

Ambient temperature range

Ta -40 °C up to +60 °C





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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 2

The following modifications are covered by this issue of the report:

- Revised 2400S Profibus DP Power Board.
- Revised 2400S Profibus DP connectors.
- Revised 2400S ANALOG BF-Core Board.
- Alternative Display/User Interface.
- Revised QA-report (changed from auditor CSA to auditor DNV).
- Add Emerson Process Management Co., LTD in Pudong as an allowed IECEx manufacturing facility.

The modifications do not affect the type of protection.

All other parameters are unchanged.

Issue 1

Product description

The transmitter type 24**S*A***3**** can be modified as stated below.

The transmitter can be equipped with a DeviceNet interface. Then the Power- and the BFCore circuit boards are modified. The new designation is transmitter type 24**S*C***3****. The transmitter can be connected optional with a plug instead of a cable bushing. The connector must to be secured by a connector guard.

The transmitter can be equipped with a Profibus DP interface. Then the Power and the BFCore circuit boards are modified. The new designation is transmitter type 24**S*D***3****. The transmitter can be connected optional with a plug instead of a cable bushing. The connector must be secured by a connector guard.

The plug and the necessary type tests of the plug are not part of this test and assessment report.

Special conditions for safe use

- The permissible ambient temperature range for the transmitter is -40 °C/-30 °C up to +60 °C. The use of the transmitter at an ambient temperature under -20 °C is only admissible, if the cables and cable entries or conduit entries are suitable for that temperature and use.

- The permissible service temperature for the sealed relay is +75 °C. It must be assured that the relay service temperature does not exceed +75 °C due to the process temperature and the sensor used (see instruction of the sensor).

- The cable entries or conduit entries shall have a degree of protection of at least IP54.

- The user interface module must not be disconnected from the encapsulated assembly unless the unit has been de-energized.

- The DIP-switches and rotating switches must not be switched unless the unit has been de-energized.

Additional special conditions for safe use for transmitters with plug sockets:

- Type 24**S*C***3****

The plug must be suitable for the plug socket type Turck FSV57-*M/M20/CS or FSV57-*M/14.5/CS. The plug must fulfil the requirements of Category 3G dependent on the use in Zone 2.

- Type 24**S*D***3****

The plug must be suitable for the plug socket type Turck FKW 4.5-*M/M20/CS or FKW 4.5-*M/14.5/NPT/CS.

The plug must fulfil the requirements of Category 3G dependent on the use in Zone 2.

- Type 24**S*C***3**** and Type 24**S*D***3****

The plugs must be equipped with a connecting nut which assures a safe fixing of the plug at the plug socket.

- In the plugged and screwed status the plugs must assure the type of protection IP 54 in accordance with EN 60529 for the contacts.

- If the plug socket is not connected with a plug, the plug socket is to be protected against water and dust in minimum IP 54 in accordance with EN 60529. Before the plug socket will be connected to a plug it must be guaranteed that there is no dust or water in the plug and the plug socket.

- The operator shall made provisions external to the apparatus, to provide transient protection device set at a level not exceeding 40% of the rated voltage at the plug sockets.



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Additional information:

Parameters

Type 24**S*C***3****

Power supply

Rated voltage (terminals 1- 2 (J1)) or Plug Socket Pin 2-3 DC 11...25 V

DeviceNet input/output circuit

DeviceNet Communication voltage, DC 30 V
(terminals 1 - 2 (J2) or Plug Socket Pin 4-5)

Sensor circuits

Drive circuit (pin connection 7 - 8)

Voltage DC 12.36 V
Current 75 mA

Pick-Off coil (pin connection 3 - 4 and 5 - 6)

Voltage DC 3.3 V
Current 27 μ A

Temperature circuit (pin connection 1, 2 and 9)

Voltage DC 2.5 V
Current 370 μ A

Ambient temperature range

Ta -40 °C up to +60 °C

Type 24**S*D***3****

Power supply

Rated voltage (terminals 1- 2 (J1)) DC 18...100 V
AC 85...250 V

Profibus DP input/output circuit

Profibus DP Communication voltage, DC 30 V
(terminals 1 - 5 (J2) or Plug Socket Pin 1-5)

Sensor circuits

Drive circuit (pin connection 7 - 8)

Voltage DC 12.36 V
Current 75 mA

Pick-Off coil (pin connection 3 - 4 and 5 - 6)

Voltage DC 3.3 V
Current 27 μ A

Temperature circuit (pin connection 1, 2 and 9)

Voltage DC 2.5 V
Current 370 μ A

Ambient temperature range

Without Profibus DP connector Ta -40 °C up to +60 °C

With Profibus DP connector Ta -30 °C up to +60 °C

Type 24**S*A***3****

Unchanged

Annexe: [BVS_05_0014x.pdf](#), [BVS_05_0014x_issue_1.pdf](#)