



Translation

(1) **EC-Type Examination Certificate**

- (2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use
in potentially explosive atmospheres

(3) **DMT 02 ATEX E 051 X**

(4) **Equipment: Transmitter Type RFT9739**E******

(5) **Manufacturer: Micro Motion, Inc.**

(6) **Address: Boulder, Co. 80301, USA**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the test and assessment report BVS PP 02.2024 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2 General requirements
EN 50018:2000 Flameproof enclosure 'd'
EN 50020:1994 Intrinsic safety 'i'

(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 EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.

Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 2G EEx d[ib] IIC T6 or II (2) G [EEx ib] IIC

Deutsche Montan Technologie GmbH

Essen, dated 11. April 2002

Signed: Jockers

Signed: Wittler

DMT-Certification body

Head of special services unit



(13) Appendix to

(14) **EC-Type Examination Certificate**

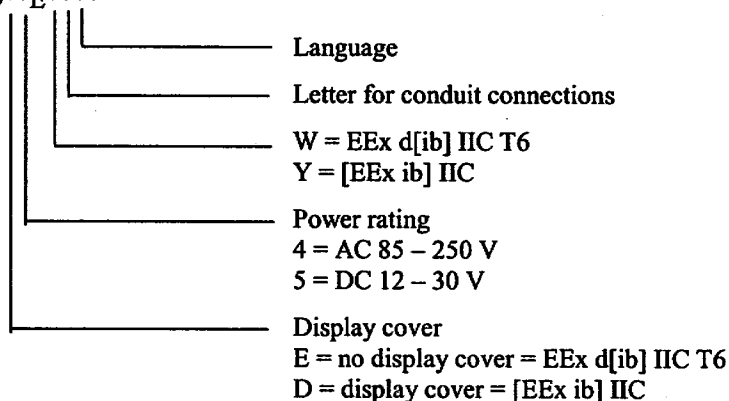
DMT 02 ATEX E 051 X

(15) 15.1 Subject and type

Transmitter type RFT9739**E****

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following variations:

Type RFT9739**E****



15.2 Description

The transmitter is, in combination with a sensor, used for measurement of mass flow and data transmission.
 The electrical circuitry of the transmitter is mounted inside a metal enclosure.

15.3 Parameters

15.3.1	mains circuit (terminals 28 - 29)				
	voltage			AC/DC	12 – 250 V
	max. voltage	Um		AC/DC	250 V
15.3.2	intrinsically safe power and signal circuits				
15.3.2.1	drive circuit (terminals 1 and 2)				
	voltage	Uo	DC	11,4	V
	current	Io		1,14	A
	rated value of the fuse			250	ma
	power	Po		1,2	W
	internal resistance	Ri		10	Ω
	for group IIC				
	max. external capacitance	Co		2,2	μF
	max. external inductance	Lo		25	μH
	max. external inductance/resistance ratio	Lo/Ro		12	μH/Ω



for group IIB				
max. external capacitance	Co		12	μF
max. external inductance	Lo		92	μH
max. external inductance/resistance ratio	Lo/Ro		46	μH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 μJ for group IIC and E = 160 μJ for group IIB will be inserted.

15.3.2.2	pick-off circuits (terminals 5- 9 and 6 - 8)				
	voltage	Uo	DC	7,6	V
	current	Io		4,75	mA
	power	Po		18	mW

for group IIC				
max. external capacitance	Co		15	μF
max. external inductance	Lo		1	H

for group IIB				
max. external capacitance	Co		200	μF
max. external inductance	Lo		3	H

15.3.2.3	temperature circuit (terminals 3, 4 and 7)				
	voltage	Uo	DC	14	V
	current	Io		7	mA
	power	Po		25	mW

for group IIC				
max. external capacitance	Co		850	nF
max. external inductance	Lo		625	mH

for group IIB				
max. external capacitance	Co		3,4	μF
max. external inductance	Lo		2,3	H

15.3.2.4	ambient temperature range	Ta		-30 °C up to +45 °C
	or (only version RFT9739E*EW***, routine test required)			-40 °C up to +45 °C

(16) Test and assessment report
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(17) Special conditions for safe use
The permissible ambient temperature range for the apparatus is -40 °C up to +45 °C. For the application of the apparatus in an ambient temperature of less than - 20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used. Entry holes which are not needed, shall be closed by stopping plugs separately certified for this purpose.



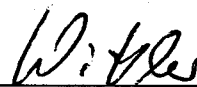
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 11.04.2002
BVS-Schu/Mi A 20020019

Deutsche Montan Technologie GmbH



DMT-Certification body



Head of special services unit



Translation



1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate

DMT 02 ATEX E 051 X

Equipment: Transmitter type RFT9739**E****

Manufacturer: Micro Motion, Inc.

Address: Boulder, Co. 80301, USA

Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and the following variation is also available

type RFT9739R*EY***

Parameters for type RFT9739R*EY***

1	mains circuit			
1.1	Type RFT9739R1EY*** (terminals L and N)			
	Nominal voltage	AC	110 / 115	V
	max. voltage	Um	AC 250	V
1.2	Type RFT9739R2EY*** (terminals L1 and L2)			
	Nominal voltage	AC	220 / 230	V
	max. voltage	Um	AC 250	V
1.3	Type RFT9739R3EY*** (connections CN2 d32 – z32)			
	Nominal voltage	DC	12 - 30	V
	max. voltage	Um	AC 250	V
2	intrinsically safe power and signal circuits			
2.1	drive circuit (connections CN1 b2 and z2)			
	voltage	Uo	DC 11.4	V
	current	Io	1.14	A
	rated value of the fuse		250	ma
	power	Po	1.2	W
	internal resistance	Ri	10	Ω
	for group IIC			
	max. external capacitance	Co	2.2	μF
	max. external inductance	Lo	25	μH
	max. external inductance/resistance ratio	Lo/Ro	12	μH/Ω
	for group IIB			
	max. external capacitance	Co	12	μF
	max. external inductance	Lo	92	μH



max. external inductance/resistance ratio Lo/Ro 46 μH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 μJ for group IIC and E = 160 μJ for group IIB will be inserted.

2.2	pick-off circuits (connections CN1 b8- z8 and CN1 b10 – z10)				
	voltage	Uo	DC	7.6	V
	current	Io		4.75	mA
	power	Po		18	mW
	for group IIC				
	max. external capacitance	Co		15	μF
	max. external inductance	Lo		1	H
	for group IIB				
	max. external capacitance	Co		200	μF
	max. external inductance	Lo		3	H
2.3	temperature circuit (connections CN1 b4, b6 and z6)				
	voltage	Uo	DC	14	V
	current	Io		7	mA
	power	Po		25	mW
	for group IIC				
	max. external capacitance	Co		850	nF
	max. external inductance	Lo		625	mH
	for group IIB				
	max. external capacitance	Co		3.4	μF
	max. external inductance	Lo		2.3	H
3	ambient temperature range	Ta		-20 °C up to +55 °C	

Test and assessment report

BVS PP 02.2024 EG as of 17.06.2002

Deutsche Montan Technologie GmbH

Essen, dated 17. June 2002

Jockers

Eickhoff

DMT-Certification body

Head of special services unit



We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 17.06.2002
BVS-Schu/Mi A 20020265

Deutsche Montan Technologie GmbH


DMT-Certification body


Head of special services unit



2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate DMT 02 ATEX E 051 X

Equipment: Transmitter type RFT9739**E****

Manufacturer: Micro Motion, Inc.

Address: Boulder, Co. 80301, USA

Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

- EN 50014:1997+A1-A2 General requirements
- EN 50018:2000 Flameproof enclosure 'd'
- EN 50020:1994 Intrinsic safety 'i'

Parameters

1	mains circuit unchanged				
2	intrinsically safe power and signal circuits				
2.1	drive circuit				
	voltage	U _o	DC	11,4	V
	current	I _o		1,14	A
	rated value of the fuse			250	mA
	power	P _o		1,2	W
	internal resistance	R _i		10	Ω
	for group IIC				
	max. external capacitance	C _o		1,7	μF
	max. external inductance	L _o		27,4	μH
	max. external inductance/resistance ratio	Lo/Ro		10,9	μH/Ω
	for group IIB				
	max. external capacitance	C _o		11,7	μF
	max. external inductance	L _o		109	μH
	max. external inductance/resistance ratio	Lo/Ro		43,7	μH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

2.2	pick-off circuits				
	voltage	Uo	DC	7,6	V
	current	Io		4,75	mA
	power	Po		18	mW
	for group IIC				
	max. external capacitance	Co		10,4	µF
	max. external inductance	Lo		1,5	H
	for group IIB				
	max. external capacitance	Co		160	µF
	max. external inductance	Lo		6,3	H
2.3	temperature circuit				
	voltage	Uo	DC	14	V
	current	Io		7	mA
	power	Po		25	mW
	for group IIC				
	max. external capacitance	Co		730	nF
	max. external inductance	Lo		725	mH
	for group IIB				
	max. external capacitance	Co		4,6	µF
	max. external inductance	Lo		2,9	H
3	ambient temperature range	Ta			
	for type RFT9739R*E****			-20 °C up to +55 °C	
	for type RFT9739D*E****			-30 °C up to +45 °C	
	for type RFT9739E*E****			-30 °C up to +45 °C	
	for type RFT9739E*EW**** (routine test required)			-40 °C up to +45 °C	

Test and assessment report

BVS PP 02.2024 EG as of 11.03.2003

Special conditions for safe use

- 1 The transmitter type RFT9739E*EY***, type RFT9739D*EY*** and type RFT9739R*EY*** must be installed outside the hazardous area in such a way that it meets a degree of protection of at least IP 20 in accordance with EN 60529.
- 2 The non-intrinsically safe circuits must only be connected to apparatus where there are no voltages higher than AC 250 V.



- 3 Along the intrinsically safe circuits a potential equalization has to be achieved.
- 4 For the transmitter type RFT9739E*EW***is additionally valid:
The permissible ambient temperature range for the apparatus is -40 °C up to +45 °C. For the application of the apparatus in an ambient temperature of less than - 20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used. Entry holes which are not needed, shall be closed by stopping plugs separately certified for this purpose.

Deutsche Montan Technologie GmbH

Essen, dated 11. March 2003

signed: Jockers

DMT-Certification body

signed: Fickhoff

Head of special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 11.03. 2003
BVS-Schu/Mi A 20020787

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit