



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX DEK 15.0001X** Page 1 of 5 Certificate history:
Status: **Current** Issue No: 3 [Issue 2 \(2019-03-22\)](#)
Date of Issue: 2020-10-07 [Issue 1 \(2017-09-12\)](#)
[Issue 0 \(2015-04-16\)](#)
Applicant: **Emerson – Rosemount, Micro Motion Inc.**
12001 Technology Drive, Eden Prairie, MN 55344
United States of America
Equipment: **Magnetic Flow Meter System Model 8750W**
Optional accessory:
Type of Protection: **Ex ic, Ex nA, Ex ec and Ex tc**
Marking: For details see Annex 1 to NL/DEK/ExTR15.0001/03.

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

2020-10-07

Date:

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6825 MJ Arnhem
Netherlands





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Manufacturer: **Emerson – Rosemount, Micro Motion Inc.**
12001 Technology Drive, Eden Prairie, MN 55344
United States of America

Additional manufacturing locations: **F-R Tecnologías De Flujo, S.A. De C.V.** **Emerson Process Management Flow B.V.**
Rosemount Flow Division Operations Neonstraat 1
Ave. Miguel de Cervantes 6718 WX Ede
111 **Netherlands**
31136 Chihuahua
Mexico

Emerson Process Management Flow Technologies Co., Ltd. **Emerson SRL**
111, Xing Min South Road Emerson Street No 4
Jiangning District, Nanjing 400641 Cluj-Napoca
Jiangsu Province, 211100 **Romania**
China

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 manufacturer'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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-15:2010 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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 Reports:

[NL/DEK/ExTR14.0030/08](#)

[NL/DEK/ExTR14.0031/07](#)

[NL/DEK/ExTR15.0001/03](#)

Quality Assessment Report:

[NO/PRE/QAR15.0018/02](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Magnetic Flow Meter System Model 8750W

The Magnetic Flow Meter System Model 8750W comprises a Magnetic Flow Transmitter and Magnetic Flow Tube.

Magnetic Flow Transmitter Models 8750W...R and 8750W...T

The Magnetic Flow Transmitter Models 8750W...R and 8750W...T may be remote mounted from the Magnetic Flow Tubes or integral mounted on the Magnetic Flow Tubes respectively.

The 8750W...R and 8750W...T Transmitters comprises a termination compartment in type of protection Ex nA or Ex ec or Ex tc for connecting power and output signal (optionally intrinsically safe Ex ic for Fieldbus and Profibus options only). The main compartment of the enclosure in types of protection Ex nA or Ex ec or Ex tc includes the electronics, optional Local Operator Interface (LOI) or display, intrinsically safe Ex ic supplies for the flow sensor and optionally intrinsically safe Ex ic output signal for Fieldbus and Profibus options only.

For connection to the Magnetic Flow Tubes, the transmitter comprises a current limiting circuit.

Connection to the Remote Mount Magnetic Flow Tube terminals for the field coils and electrode wiring (intrinsically safe Ex ic) are provided in the Remote Junction Box compartment in types of protection Ex nA or Ex ec or Ex tc.

Degree of protection, per IEC 60079-0 and IEC 60529: IP66
Ambient temperature range: $-29\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

Magnetic Flow Transmitter Model 8750W...W

The Magnetic Flow Transmitter Model 8750W...W is remote mounted from the Magnetic Flow Tube Model 8750W.

The main compartment of the enclosure in types of protection Ex ec or Ex nA or Ex tc includes the electronics, optional Local Operator Interface (LOI), optional intrinsically safe Ex ic supplies for the flow sensor. The optional keypad for the LOI is in type of protection Ex ic.

The 8750W...W Transmitter comprises a termination compartment in types of protection Ex ec or Ex nA or Ex tb for connecting power and output signal.

Connections to the Magnetic Flow Tubes, terminals are provided for the optional intrinsically safe Ex ic field coils and electrode wiring.

For connection to the Magnetic Flow Tubes, the transmitter comprises a current limiting circuit.

Degree of protection, per IEC 60079-0 and IEC 60529: IP66
Degree of protection, per ISO 20653: IP69K
Ambient temperature range: $-40\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

For more information see Annex 1 to NL/DEK/ExTR15.0001/03.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Terminals for the output signals of the Magnetic Flow Transmitters, cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection. This must be taken into account upon installation.
- When utilizing the keypad of Magnetic Flow Transmitter Model 8750W...W, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
- Models marked with ESD warning label, do not rub surface with a dry cloth or clean with solvents to avoid electrostatic charge build-up.
- Conduit entries must be installed to maintain the enclosure ingress rating of IP66 (Transmitter and Flow Tube), IP68 (Flow Tube) or IP69K (Flow Tube and 8750W...W) as applicable.



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Equipment (continued):

Magnetic Flow Tube Model 8750W

The Magnetic Flow Tube of the Magnetic Flow Meter System Model 8750W is designed for use with Magnetic Flow Transmitter of that same system.

The Remote Mount Flow Tube comprises a Remote Junction Box in types of protection Ex nA or Ex ec or Ex tc for the connection of the field coils and electrode wiring (intrinsically safe Ex ic) to the Remote Mount Magnetic Flow Transmitter. The field coils are mounted in a welded compartment in types of protection Ex nA or Ex ec or Ex tc. The electrodes (intrinsically safe Ex ic) are mounted in the same welded compartment as the field coils but protrude into the process medium.

When utilized as EPL Dc equipment, EPL Dc does not apply to the process.

Degree of protection, per IEC 60079-0 and IEC 60529: IP66, IP68 (10m, 48h)

Degree of protection, per ISO 20653: IP69K

Ambient temperature range: $-29\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

For more information see Annex 1 to NL/DEK/ExTR15.0001/03.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

1. Assessed per IEC 60079-0 Ed7;
2. Assessed per IEC 60079-7 Ed5.1;
3. Minor constructional changes;
4. Update Ex tc marking to include [Ex ic] output.

Annex:

[382768700-ExTR15.0001.03-Annex1.pdf](#)

Note: In this document [.] is used as decimal separator.

Nomenclature Magnetic Flow Meter System Model 8750W and electrical data

8750W ... R 1 A 2 ... F 005 ... Z1 ... M4 ... AX ... V1 ... R50
 I II III IV V VI VII VIII IX X XI IX

Designation	Explanation	Value	Explanation
I	Model	8750W	Flow Meter System Model 8750W
II	Transmitter Mount	R T W	Remote Mount Integral Mount Wall Mount
III	Transmitter Power Supply	1 2	AC (90 - 250 Vac, 50 / 60 Hz), not for Ex nA or Ex ec DC (12 - 42 Vdc)
IV	Transmitter Outputs	A M F P 0	4 - 20 mA with digital HART Protocol & Scalable Pulse Output Modbus RS-485 Intrinsically Safe Fieldbus / FISCO and Intrinsically Safe Scalable Pulse Output Intrinsically Safe Profibus and Intrinsically Safe Scalable Pulse Output Spare Flow Tube, no Transmitter
V	Conduit Entries	1 2 4 5	1/2-14 NPT female CM20, M20 female 1/2-14 NPT female, 8750W...R / T only CM20, M20 female, 8750W...R / T only
VI	Electrode Type	A, B, E, F 0	Seal of electrodes comply with IEC 61010-1. Spare Transmitter, No Flow Tube
VII	Line Size	005 to 480 000	1/2" NPS (15 mm) to 48" NPS (1200 mm) Spare Transmitter, no Flow Tube
VIII	Safety Approvals	Z1 ATEX	Transmitter Models 8750W...R and 8750W...T: Ex II 3 G Ex nA [ic] IIC T4 Gc * Ex II 3 G Ex ec [ic] IIC T4 Gc * Ex II 3 D Ex tc IIIC T80 °C...T130 °C Dc ** ----- Ex II 3 G Ex nA [ic] IIC T4 Gc * Ex II 3 G Ex ec [ic] IIC T4 Gc * Ex II 3 D Ex tc [ic] IIIC T80 °C...T130 °C Dc **/** ----- Transmitter Model 8750W...W: Ex II 3 G Ex nA ic [ic] IIC T4 Gc * Ex II 3 G Ex ec ic [ic] IIC T4 Gc * Ex II 3 D Ex tc IIIC T80 °C Dc ** ----- Ex II 3 G Ex nA ic [ic] IIC T4 Gc * Ex II 3 G Ex ec ic [ic] IIC T4 Gc * Ex II 3 D Ex tc [ic] IIIC T80 °C Dc **/** ----- Flow Tube: Ex II 3 G Ex nA ic IIC T5...T4 Gc Ex II 3 G Ex ec ic IIC T5...T4 Gc Ex II 3 D Ex tc IIIC T80 °C...T130 °C Dc

Nomenclature Magnetic Flow Meter System Model 8750W and electrical data (continued)

VIII	Safety Approvals	Z7 IECEX	Transmitter Models 8750W...R and 8750W...T: Ex nA [ic] IIC T4 Gc * Ex ec [ic] IIC T4 Gc * Ex tc IIIC T80 °C...T130 °C Dc **
			Ex nA [ic] IIC T4 Gc * Ex ec [ic] IIC T4 Gc * Ex tc [ic] IIIC T80 °C...T130 °C Dc **/**
			Transmitter Model 8750W...W: Ex nA ic [ic] IIC T4 Gc * Ex ec ic [ic] IIC T4 Gc * Ex tc IIIC T80 °C Dc **
			Ex nA ic [ic] IIC T4 Gc * Ex ec ic [ic] IIC T4 Gc * Ex tc [ic] IIIC T80 °C Dc **/**
			Flow Tube: Ex nA ic IIC T5...T4 Gc Ex ec ic IIC T5...T4 Gc Ex tc IIIC T80 °C...T130 °C Dc
		Z9 IECEX	Transmitter Models 8750W...R and 8750W...T: Ex nA [ic] IIC T4 Gc * Ex ec [ic] IIC T4 Gc * Ex tc IIIC T80 °C...T130 °C Dc **
			Ex nA [ic] IIC T4 Gc * Ex ec [ic] IIC T4 Gc * Ex tc [ic] IIIC T80 °C...T130 °C Dc **/**
			Transmitter Model 8750W...W: Ex nA ic [ic] IIC T4 Gc * Ex ec ic [ic] IIC T4 Gc * Ex tc IIIC T80 °C Dc **
			Ex nA ic [ic] IIC T4 Gc * Ex ec ic [ic] IIC T4 Gc * Ex tc [ic] IIIC T80 °C Dc **/**
			Flow Tube: Ex nA ic IIC T5...T4 Gc Ex ec ic IIC T5...T4 Gc Ex tc IIIC T80 °C...T130 °C Dc
		ND ATEX	Transmitter Models 8750W...R and 8750W...T: ⊕ II 3 D Ex tc IIIC T80 °C...T130 °C Dc **
			⊕ II 3 D Ex tc [ic] IIIC T80 °C...T130 °C Dc **/**
			Transmitter Model 8750W...W: ⊕ II 3 D Ex tc IIIC T80 °C Dc **
			⊕ II 3 D Ex tc [ic] IIIC T80 °C Dc **/**
			Flow Tube: ⊕ II 3 D Ex tc IIIC T80 °C...T130 °C Dc **
		NF IECEX	Transmitter Models 8750W...R and 8750W...T: Ex tc IIIC T80 °C...T130 °C Dc **
			Ex tc [ic] IIIC T80 °C...T130 °C Dc **
			Transmitter Model 8750W...W: Ex tc IIIC T80 °C Dc **
			Ex tc [ic] IIIC T80 °C Dc **
			Flow Tube: Ex tc IIIC T80 °C...T130 °C Dc **
		NOTE:	* Model 8750W Transmitter DC Power Supply only ** Model 8750W Transmitter AC and DC Power Supply *** Intrinsically Safe Output (see IV) options F or P

Note: In this document [.] is used as decimal separator.

Nomenclature Magnetic Flow Meter System Model 8750W and electrical data (continued)

Designation	Explanation	Value	Explanation
IX	Transmitter Display	-- M4 M5	Without LOI and keypad LOI (+ keypad for Transmitter Model 8750W...W only) Display
X	Transmitter Discrete Input/Output	AX	Two Discrete Channels (DI/DO 1, DO 2)
XI	Specials Paint	Vx	Special Paint Systems ***
		NOTE:	*** Subject to special conditions for safe use.
XII	Remote Cable	Rxx ****	Standard Temperature Component
		NOTE:	**** Length = xx x 10 ft, max. 500 ft

Thermal data

Temperature class and specified maximum surface temperature “T”

Magnetic Flow Transmitter Models 8750W...R and 8750W...T

Remote Mount Temperature class: T4
 Maximum surface temperature “T”: T80 °C
 Integral Mount See Temperature class and specified maximum surface temperature “T”
 of Flow Tube on which the transmitter is mounted.

Magnetic Flow Transmitter Model 8750W...W

Remote Mount Temperature class: T4
 Maximum surface temperature “T”: T80 °C

Magnetic Flow Tube

Line Size [NPS]	Max. Process Temperature	Type of protect.	Transmitter Mounting	T-class	Type of protect.	Transmitter Mounting	Maximum surface temperature “T”
All	60 °C	Ex ec Ex nA	Integral	T4	Ex tc	Integral	T80 °C
	60 °C		Remote	T5		Remote	T80 °C
	90 °C		Integral/Remote	T4		Integral/Remote	T100 °C
	120 °C		Remote	T4		Remote	T130 °C

Electrical data

Magnetic Flow Transmitter Models 8750W...R and 8750W...T

Supply circuit (terminals 9 and 10): AC power supply 90-250 Vac; 50/60 Hz; 40 VA; U_m = 250 V
 Supply circuit (terminals 9 and 10): DC power supply 12-42 Vdc; 15 W; U_m = 250 V
 Dissipated power: AC or DC 32 VA (w. Flow Tube connected)

Data circuit (terminals 5, 6, 7 and 8): Digital I/O signals U_m = 250 V

Electrical data (continued)

Output Signals

Profibus, Foundation Fieldbus:

Output circuit (terminals 1 and 2):

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 2.85 \text{ W}$; $C_i = 924 \text{ pF}$; $L_i = 0 \text{ }\mu\text{H}$.

Output circuit (terminals 3 and 4): Pulse

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 28 \text{ V}$; $I_i = 100 \text{ mA}$; $P_i = 1.0 \text{ W}$; $C_i = 4.5 \text{ nF}$; $L_i = 0.0 \text{ }\mu\text{H}$.

FISCO:

Output circuit (terminals 1 and 2):

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 5.32 \text{ W}$; $C_i = 924 \text{ pF}$; $L_i = 0 \text{ }\mu\text{H}$.

Output circuit (terminals 3 and 4): Pulse

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 28 \text{ V}$; $I_i = 100 \text{ mA}$; $P_i = 1.0 \text{ W}$; $C_i = 4.5 \text{ nF}$; $L_i = 0.0 \text{ }\mu\text{H}$.

RS-485 Modbus digital Output & Scalable Pulse Output:

Output circuit (terminals 1 and 2): Modbus $U_m = 250 \text{ V}$

Output circuit (terminals 3 and 4): Pulse $U_m = 250 \text{ V}$

4 - 20 mA with digital HART Protocol & Scalable Pulse Output:

Output circuit (terminals 1 and 2): 4-20 mA $U_m = 250 \text{ V}$

Output circuit (terminals 3 and 4): Pulse $U_m = 250 \text{ V}$

Transmitter Remote Mount Junction Box, Flow Tube connection

Output circuit (terminals 1, 2 and 3): Coil drive 500 mA; 40 Vmax.; 9 Wmax.

For explosive gas or vapor atmospheres (Category 3 G or EPL Gc):

Output circuit (terminals 17, 18, 19): Electrode circuit

In types of protection intrinsic safety Ex ic IIC, with the following maximum values:

$U_o = 28.56 \text{ V}$; $I_o = 5.77 \text{ mA}$; $P_o = 165 \text{ mW}$; $C_o = 61.7 \text{ nF}$; $L_o = 1.0 \text{ H}$.

For combustible dust atmospheres (Category 3 D or EPL Dc):

Output circuit (terminals 17, 18, 19): Electrode circuit 5 V; 200 μA ; 1 mW

Magnetic Flow Transmitter Model 8750W...W

Supply circuit (terminals L1 and N/L2): AC power supply 90-250 Vac; 50/60 Hz; 40 VA; $U_m = 250 \text{ V}$

Supply circuit (terminals DC+ and DC-): DC power supply 12-42 Vdc; 15 W; $U_m = 250 \text{ V}$

Dissipated power: AC or DC 32 VA (w. Flow Tube connected)

Data circuit (terminals 9, 10, 11 and 12): Digital I/O signals $U_m = 250 \text{ V}$

Note: In this document [.] is used as decimal separator.

Electrical data (continued)

Output Signals

Profibus, Foundation Fieldbus:

Output circuit (terminals 7 and 8):

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 2.85 \text{ W}$; $C_i = 924 \text{ pF}$; $L_i = 0 \text{ }\mu\text{H}$.

Output circuit (terminals 5 and 6): Pulse

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 28 \text{ V}$; $I_i = 100 \text{ mA}$; $P_i = 1.0 \text{ W}$; $C_i = 4.5 \text{ nF}$; $L_i = 0.0 \text{ }\mu\text{H}$.

FISCO:

Output circuit (terminals 7 and 8):

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit or a circuit in accordance with FISCO, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 380 \text{ mA}$; $P_i = 5.32 \text{ W}$; $C_i = 924 \text{ pF}$; $L_i = 0 \text{ }\mu\text{H}$.

Output circuit (terminals 5 and 6): Pulse

In type of protection intrinsic safety Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

$U_i = 28 \text{ V}$; $I_i = 100 \text{ mA}$; $P_i = 1.0 \text{ W}$; $C_i = 4.5 \text{ nF}$; $L_i = 0.0 \text{ }\mu\text{H}$.

RS-485 Modbus digital Output & Scalable Pulse Output:

Output circuit (terminals 7 and 8): Modbus $U_m = 250 \text{ V}$

Output circuit (terminals 5 and 6): Pulse $U_m = 250 \text{ V}$

4 - 20 mA with digital HART Protocol & Scalable Pulse Output:

Output circuit (terminals 7 and 8): 4-20 mA $U_m = 250 \text{ V}$

Output circuit (terminals 5 and 6): Pulse $U_m = 250 \text{ V}$

Flow Tube connection

Output circuit (terminals 1, 2 and 3): Coil drive 500 mA; 40 Vmax.; 9 Wmax.

For explosive gas or vapor atmospheres (Category 3 G or EPL Gc):

Output circuit (terminals 17, 18, 19): Electrode circuit

In types of protection intrinsic safety Ex ic IIC, with the following maximum values:

$U_o = 28.56 \text{ V}$; $I_o = 5.77 \text{ mA}$; $P_o = 165 \text{ mW}$; $C_o = 61.7 \text{ nF}$; $L_o = 1.0 \text{ H}$.

For combustible dust atmospheres (Category 3 D or EPL Dc):

Output circuit (terminals 17, 18, 19): Electrode circuit 5 V; 200 μA ; 1 mW

Flow Tube

Flow Tube Remote Mount Junction Box, Transmitter connection

Input circuit (terminals 1, 2 and 3): Coil drive 500 mA; 40 Vmax; 20 Wmax.

For explosive gas or vapor atmospheres (Category 3 G or EPL Gc):

Input circuit (terminals 17, 18 and 19): Electrode circuit

In type of protection intrinsic safety Ex ic IIC, with the following maximum values:

$U_i = 30 \text{ V}$; $I_i = 50 \text{ mA}$; $P_i = 1.0 \text{ W}$; $C_i = 1.9 \text{ nF}$; $L_i = 630 \text{ }\mu\text{H}$.

For combustible dust atmospheres (Category 3 D or EPL Dc):

Input circuit (terminals 17, 18 and 19): Electrode circuit 5 V; 200 μA ; 1 mW