

CERTIFICATE

(1) Type Examination

(2) **Product intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) Type Examination Certificate Number: **DEKRA 15ATEX0003 X** Issue Number: **3**

(4) Product: **Magnetic Flow Meter System Model 8750W**

(5) Manufacturer: **Emerson – Rosemount, Micro Motion Inc.**

(6) Address: **12001 Technology Drive, Eden Prairie,
MN 55344, United States of America**

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

(8) DEKRA Certification B.V., certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in confidential test report no. NL/DEK/ExTR15.0001/02.

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

**EN 60079-0 : 2012 + A11 : 2013
EN 60079-15 : 2010**

**EN 60079-7 : 2015
EN 60079-31 : 2014**

EN 60079-11 : 2012

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

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This Type Examination Certificate relates only to the design and construction of the specified product and not to the manufacturing process and its monitoring.

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



**II 3 G Ex nA [ic] IIC T4 Gc
II 3 G Ex ec [ic] IIC T4 Gc
II 3 G Ex nA ic IIC T5...T4 Gc
II 3 G Ex ec ic IIC T5...T4 Gc
II 3 G Ex nA ic [ic] IIC T4 Gc
II 3 G Ex ec ic [ic] IIC T4 Gc
II (3) G [Ex ic Gc] IIC
II 3 D Ex tc IIIC T80 °C Dc
II 3 D Ex tc IIIC T80 °C...T130 °C Dc**

for details see Annex to Type
Examination Certificate
DEKRA 15ATEX0003 X, issue no. 3

Date of certification: 22 March 2019

DEKRA Certification B.V.

R.H.D. Pommé
Certification Manager

(13) **SCHEDULE**

(14) **to Type Examination Certificate DEKRA 15ATEX0003 X**

Issue No. 3

(15) **Description**

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 Remote Mount Transmitter comprises a termination compartment in type of protection Ex nA, 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, 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 the 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, Ex ec or Ex tc.

The Integral Mount Transmitter is identical to the Remote Mount Transmitter, except that it is mounted directly on the tube adaptor of the Magnetic Flow Tube instead of to the Remote Junction Box.

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

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, 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, which means that the keypad may be used when the transmitter is operating in an environments requiring EPL Gc or Dc.

The Remote Mount Transmitter comprises a termination compartment in types of protection Ex ec, Ex nA or Ex tb for connecting power and output signal. For the connection 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.

(13) **SCHEDULE**

(14) **to Type Examination Certificate DEKRA 15ATEX0003 X**

Issue No. 3

Description (continued)

Magnetic Flow Tube

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 Magnetic Flow Tube for the Meter System Model 8750W may be remote mounted from the Magnetic Flow Transmitter or integral mounted to the Magnetic Flow Transmitter. The Flow Tube is utilized with flanges for process connection.

The Remote Mount Flow Tube comprises a Remote Junction Box in types of protection Ex nA, 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, 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.

The Integral Mount Flow Tube is identical to the Remote Mount Flow Tube, except that it is intended to be mounted directly to the Magnetic Transmitter instead of to the Remote Junction Box.

For nomenclature, thermal data, product ratings, electrical data and description of system elements see Annex to this certificate.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR15.0001/02

(17) **Specific conditions of use**

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.

When "Special Paint Systems" are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.

Conduit entries must be installed to maintain the enclosure ingress rating of IP66 (Transmitter and Flow Tube), IP68 (Flow Tube) or IP69K (Flow Tube or 8750W...W transmitter) as applicable.

(13) **SCHEDULE**

(14) **to Type Examination Certificate DEKRA 15ATEX0003 X**

Issue No. **3**

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR15.0001/02.

(20) **Certificate history**

Issue 1 - 217353600 Initial certificate.

Issue 2 - 217353200 Update the existing certificate, DEKRA 15ATEX0003X for Magnetic Flow Transmitter Model 8750W for type of protection Ex ec (update from EN 60079-15 : 2010 to EN 60079-7 : 2015)
Update the existing certificate, DEKRA 15ATEX0003X for Magnetic Flow Tube Model 8750W for type of protection Ex ec (update from EN 60079-15 : 2010 to EN 60079-7 : 2015)
Addition of the of Magnetic Flow Transmitter Model 8750W...W. The Model 8750W...W transmitter is assessed in accordance with EN 60079-0 : 2012 for types of protection Ex nA according to EN 60079-15 : 2010, Ex ec according to EN 60079-7 : 2015 and Ex tb according to EN 60079-31 : 2014.
Editorial changes in description of the Magnetic Flow Transmitter Model 8750W in order to be able to differentiate between the models.

Issue 3 - 381942200 Assessment for Ex ec protection for Magnetic Flow Tube Model 8750W.
Add Foundation Fieldbus / FISCO and Profibus options for Magnetic Flow Meter System Model 8750W.
Miscellaneous drawing updates.

**Annex to: Certificate of Conformity IECEx DEK 15.0001X
EU-Type Examination Certificate DEKRA 15ATEX0003 X, Issue 3
Report NL/DEK/ExTR15.0001/02**

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

Description

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 Remote Mount Transmitter comprises a termination compartment in type of protection Ex nA, 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, 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 the 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, Ex ec or Ex tc.

The Integral Mount Transmitter is identical to the Remote Mount Transmitter, except that it is mounted directly on the tube adaptor of the Magnetic Flow Tube instead of to the Remote Junction Box.

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

Degree of protection, per EN-IEC 60079-0 and EN-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 Tubes.

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 Remote Mount Transmitter comprises a termination compartment in types of protection Ex ec or Ex nA or Ex tb for connecting power and output signal. For the connection 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 EN-IEC 60079-0 and EN-IEC 60529: IP66
Degree of protection, per ISO 20653: IP69K
Ambient temperature range: $-40\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

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Description (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 Magnetic Flow Tube for the Meter System Model 8750W may be remote mounted from the Magnetic Flow Transmitter or integral mounted to the Magnetic Flow Transmitter. The Flow Tube is utilized with flanges for process connection.

The Remote Mount Flow Tube comprises a Remote Junction Box in types of protection Ex nA, 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, 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.

The Integral Mount Flow Tube is identical to the Remote Mount Flow Tube, except that it is intended to be mounted directly to the Magnetic Transmitter instead of to the Remote Junction Box.

Degree of protection, per EN-IEC 60079-0 and EN-IEC 60529:	IP66, IP68 (10m, 48h)
Degree of protection, per ISO 20653:	IP69K
Ambient temperature range:	$-29\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$

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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; $U_m = 250\text{ V}$
 Supply circuit (terminals 9 and 10): 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 5, 6, 7 and 8): Digital I/O signals $U_m = 250\text{ V}$

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 vapour 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

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Electrical data (continued)

Magnetic Flow Transmitter Model 8750W...W

Supply circuit (terminals L1 and N/L2): AC power supply 90-250 Vac; 50/60 Hz; 40 VA; $U_m = 250$ V
Supply circuit (terminals DC+ and DC-): 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 9, 10, 11 and 12): Digital I/O signals $U_m = 250$ V

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:

$U_i = 30$ V; $I_i = 380$ mA; $P_i = 2.85$ W; $C_i = 924$ pF; $L_i = 0$ μ 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:

$U_i = 28$ V; $I_i = 100$ mA; $P_i = 1.0$ W; $C_i = 4.5$ nF; $L_i = 0.0$ μ 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:

$U_i = 30$ V; $I_i = 380$ mA; $P_i = 5.32$ W; $C_i = 924$ pF; $L_i = 0$ μ 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:

$U_i = 28$ V; $I_i = 100$ mA; $P_i = 1.0$ W; $C_i = 4.5$ nF; $L_i = 0.0$ μ H.

RS-485 Modbus digital Output & Scalable Pulse Output:

Output circuit (terminals 7 and 8): Modbus $U_m = 250$ V

Output circuit (terminals 5 and 6): Pulse $U_m = 250$ V

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

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

Output circuit (terminals 5 and 6): Pulse $U_m = 250$ V

Flow Tube connection

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

For explosive gas or vapour 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:

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

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

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

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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 vapour 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