Installation Instructions
P/N MMI-20011713, Rev. A
February 2009

ATEX Installation Instructions for Micro Motion® Model LFT Low Flow Transmitters

Micro Motion®

EMERSON™
Process Management

Note: For hazardous installations in Europe, refer to standard EN 60079-14 if national standards do not apply.

Information affixed to equipment that complies with the Pressure Equipment Directive can be found on the internet at www.micromotion.com/library.

Reference no. EB-20002240 Rev. A

Model LFT Transmitters

ATEX Installation Instructions and Drawings

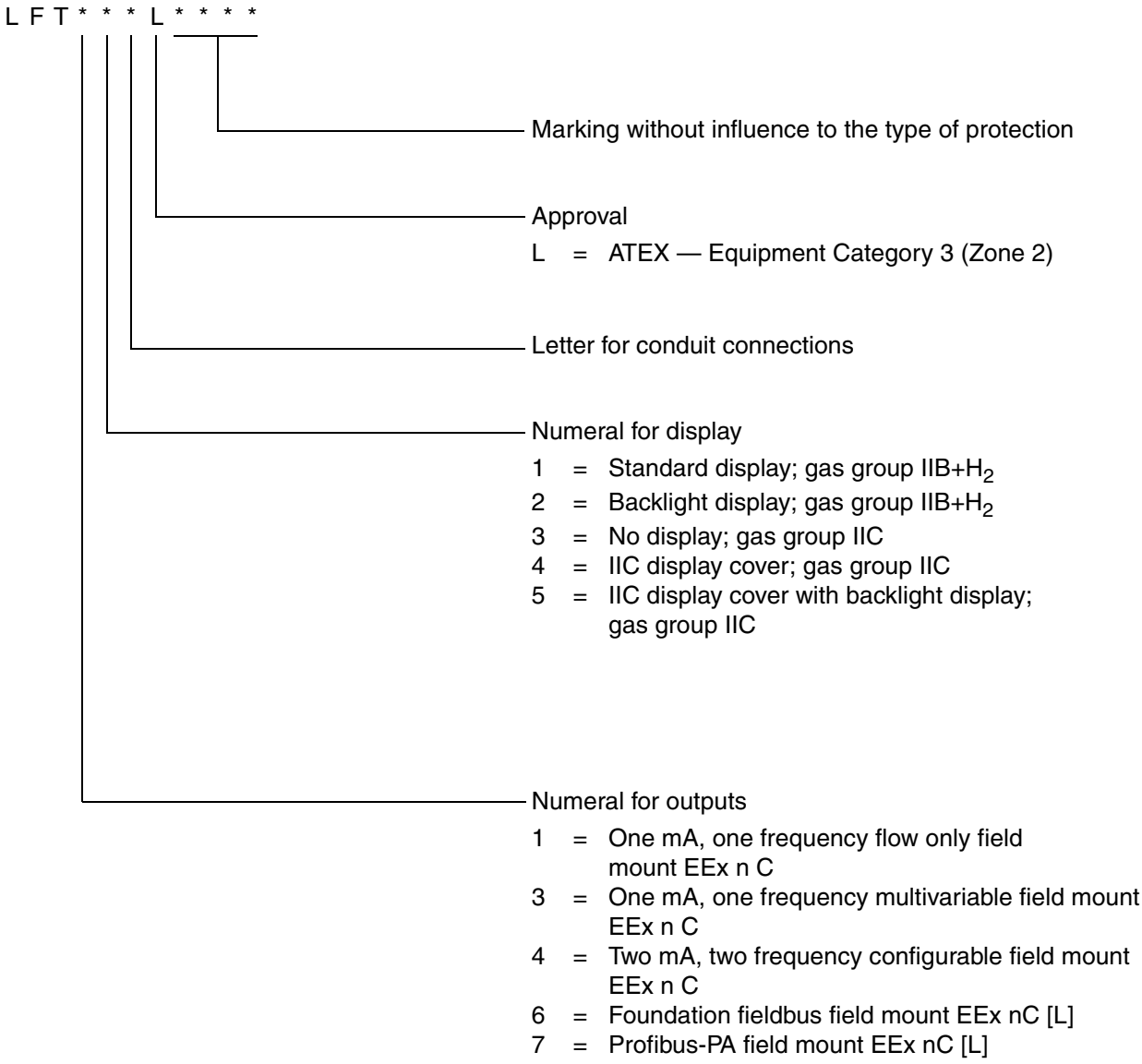
- For installing a Model LFT transmitter with a 4-wire connection to an LF sensor

Subject:	Equipment type	**Transmitter type LFT***L****	
Manufactured and submitted for examination		**Micro Motion, Inc.**	
Address		**Boulder, Co. 80301, USA**	
Standard basis		EN 50021:1999	Non-sparking ´n´
		EN 50281-1-1:1998	Dust ´D´
Code for type of protection		**EEx nC IIB +H_2 T6**	
		EEx nC IIC T6	
		EEx nC [L] IIB +H_2 T6	
		EEx nC [L] IIC T6	

1) Subject and type

Transmitter type LFT***L****

Instead of the *** letters and numerals will be inserted which characterize the following modifications:



2) Description

The Low Flow Transmitter (LFT) is used in combination with LF Series Sensors for measurement of mass flow and data transmission.

2.1) LFT field mount

The electrical circuitry of the transmitters is mounted inside a metal enclosure which is divided into three compartments.

In the compartment with type of protection “nC” the Terminal Board, Power Supply Board, Feature Board, and (optionally) the Display Board are mounted. When executed with display, the gas group is IIB + H_2. When it is executed without display, or with the alternative window display cover, the gas group is IIC.

The main terminal compartment with type of protection “nC” is separated into two sections. One section contains two screw terminals for supplying power to the device. The other section contains 6 terminals for general I/O. In the case of Fieldbus or Profibus, these terminals are energy limited. The enclosure is constructed with a secondary terminal compartment with type of protection “nC” for the connection of remotely operating non sparking “nA” Model LF Series sensors.

3) Field mount parameters (models LFT(1, 3, 4, 6 or 7)**L****)

3.1) Mains circuit (terminals 9–10 in main terminal compartment)

Voltage		AC/DC	18–250	V
Max voltage	Um	AC/DC	250	V

3.2) Non energy limited input/output circuits (terminals 1–6 in main terminal compartment) only for type LFT(1, 3 or 4)**L****

Voltage	Um	AC/DC	60	V

3.3) Energy limited output circuits type of protection EEx nL II available in main terminal compartment marked with EEx nC [L].

3.3.1) Fieldbus circuit (terminals Fieldbus 1 and 2) only for type LFT6**L**** and type LFT7**L****

Voltage	Ui	DC	30	V
Current	Ii		380	mA
Power	Pi		5,32	W
Effective internal inductance	Li		Negligible	
Effective internal capacitance	Ci		Negligible	

For the connection of a Fieldbus circuit in accordance with FNICO model

3.4) Power and signal circuits in secondary terminal compartment marked with "nC" for type LFT1**L**** or LFT3**L**** or LFT4**L**** or LFT6**L**** or LFT7**L**** (to remotely mounted LF sensor):

Voltage	Uo	DC	16,31	V
Current	Io		0,396	A
Power	Po		5,96	W

3.5) Ambient temperature range

LFT(1, 3, 4, 6 or 7)(1, 2, or 3)*L****	Ta	–40 °C up to +55 °C
LFT(1, 3, 4, 6 or 7)(4 or 5)*L****	Ta	–20 °C up to +55 °C

4) Marking

LFT*(1, 2 or 3)*L****	–40 °C ≤ Ta ≤ +55 °C
LFT(1, 3, 4, 6 or 7)(4 or 5)*L****	–20 °C ≤ Ta ≤ +55 °C

- type	- type of protection
LFT(1, 3, or 4)(1 or 2)*L****	CE ⟨Ex⟩ II 3 G EEx nC IIB + H_2 T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X
LFT(6 or 7)(1 or 2)*L****	CE ⟨Ex⟩ II 3 G EEx nC [L] IIB + H_2 T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X
LFT(1, 3, or 4)(3, 4 or 5)*L****	CE ⟨Ex⟩ II 3 G EEx nC IIC T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X
LFT(6 or 7)(3, 4 or 5)*L****	CE ⟨Ex⟩ II 3 G EEx nC [L] IIC T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X

After de-energizing, delay 5 minutes before opening (models LFT(1, 3, 4, 6 or 7)**L**** only).

5) Special conditions for safe use / Installation instructions

5.1) For the application of the transmitter in an ambient temperature of less than –20 °C suitable cable and cable entries or conduit entries for this condition shall be used (models LFT*(1, 2 or 3)*L**** only).

5.2) When cable entries are used they shall conform to clause 7.2.6 of EN 50021.

5.3) For type LFT(6 or 7)**L**** only, the cover of the terminal compartment containing terminals 1–6 may be removed for short periods when the apparatus is in service to permit checking or adjustment of energized energy limited circuits.

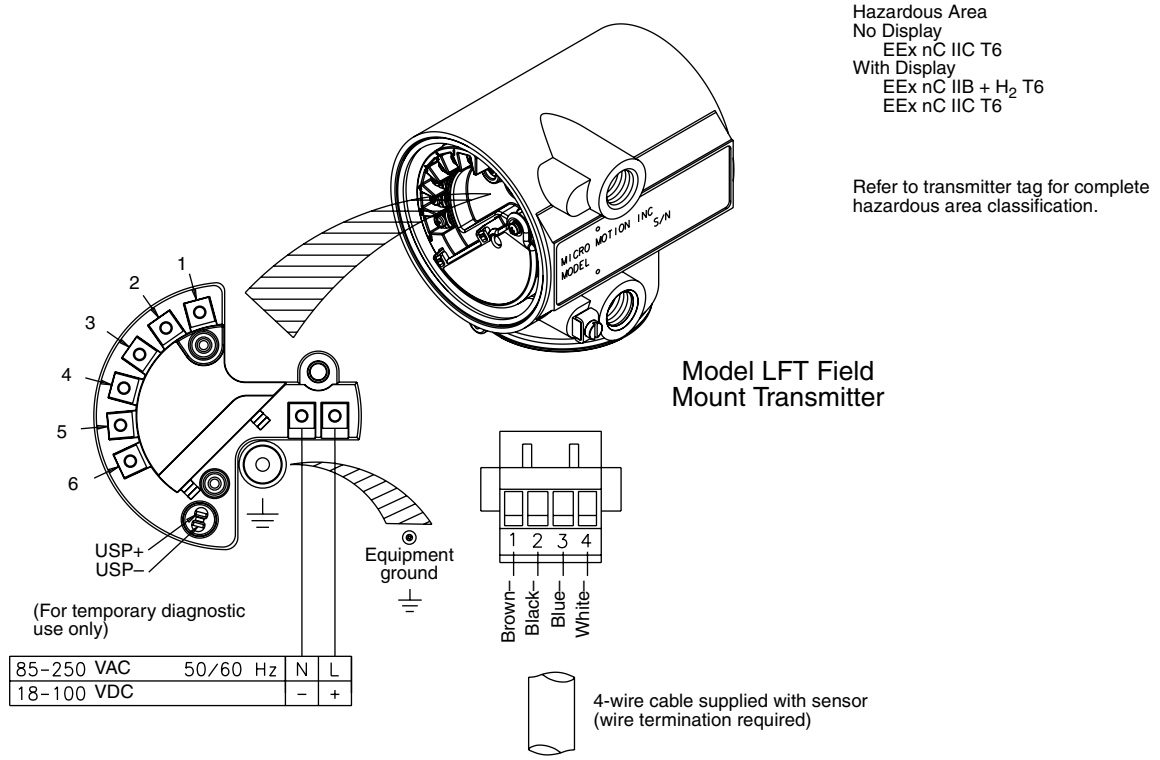
5.4) A degree of ingress protection of at least IP 54 according to EN 60529 will only be achieved when cable and conduit entries providing IP54 according to EN 60529 are used. For applications in explosive atmospheres caused by air/dust mixtures, a degree of ingress protection of at least IP66/IP67 according to EN 60529 will only be achieved when cable and conduit entries are used that provide a degree of ingress protection of at least IP66/IP67 according to EN 60529.

5.5) Replacement of fuses is not allowed.

Model LFT installation drawings

Figure 1: Model LFT transmitter to LF sensor

COMBINE THIS DRAWING WITH FIGURE 2



Model LFT terminal configuration

Terminal		Analog LFT(1 or 3)**L****	Config I/O LFT4**L****		Fieldbus (I.S.) LFT6**L****	PROFIBUS-PA LFT7**L****
1	I/O 1+	mA / HART +	mA1 / HART +	Channel A	Fieldbus +	PROFIBUS +
2	I/O 1–	mA / HART –	mA1 / HART –	Channel A	Fieldbus –	PROFIBUS –
3	I/O 2+	FO +	mA2 / DO1 / FO +	Channel B		
4	I/O 2–	FO –	mA2 / DO1 / FO –	Channel B		
5	I/O 3+	RS-485 A	FO / DO2 / DI +	Channel C		
6	I/O 3–	RS-485 B	FO / DO2 / DI –	Channel C		

Reference no. EB-20002237 Rev. A
EB-20002239 Rev. A
EB-20002236 Rev. A
EB-20002235 Rev. A

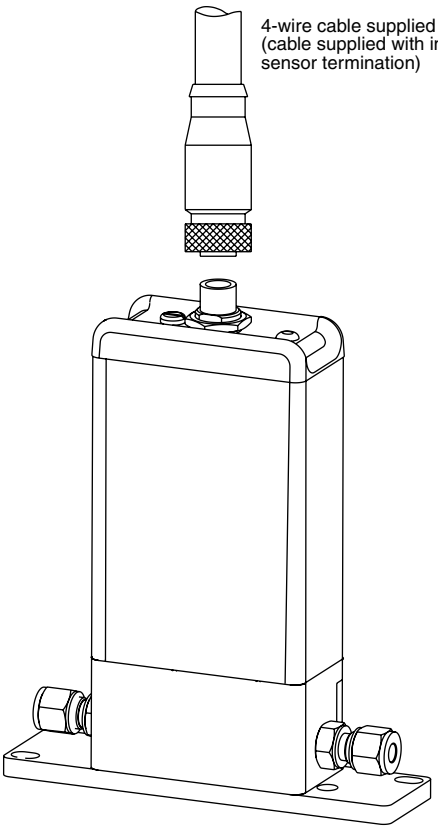
Figure 2: LF sensor

COMBINE THIS DRAWING WITH FIGURE 1

Hazardous Area
EEx nA IIC

Refer to sensor tag for complete hazardous area classification.

4-wire cable supplied with sensor
(cable supplied with integral molded connector for sensor termination)



Models: LF2M, LF3M, LF4M

Reference no. EB-20002237 Rev. A

For the latest Micro Motion product specifications, view the PRODUCTS section of our web site at www.micromotion.com

Micro Motion Inc. USA
Worldwide Headquarters
7070 Winchester Circle
Boulder, Colorado 80301
T +1 303-527-5200
+1 800-522-6277
F +1 303-530-8459

Micro Motion Europe
Emerson Process Management
Neonstraat 1
6718 WX Ede
The Netherlands
T +31 (0) 318 495 555
F +31 (0) 318 495 556

Micro Motion Asia
Emerson Process Management
1 Pandan Crescent
Singapore 128461
Republic of Singapore
T +65 6777-8211
F +65 6770-8003

Micro Motion United Kingdom
Emerson Process Management Limited
Horsfield Way
Bredbury Industrial Estate
Stockport SK6 2SU U.K.
T +44 0870 240 1978
F +44 0800 966 181

Micro Motion Japan
Emerson Process Management
1-2-5, Higashi Shinagawa
Shinagawa-ku
Tokyo 140-0002 Japan
T +81 3 5769-6803
F +81 3 5769-6844

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