

**Installation Instructions**

P/N 20002600, Rev. A

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# **ATEX Installation Drawings and Instructions for LFT Transmitters**

For ATEX-approved installations





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For ATEX-approved installations

For technical assistance, phone the support center nearest you:

- In U.S.A., phone 1-800-522-MASS (1-800-522-6277)
- In Canada and Latin America, phone (303) 527-5200
- In Asia, phone (65) 6770-8155
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# 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<sub>2</sub> T6**

**EEx nC IIC T6**

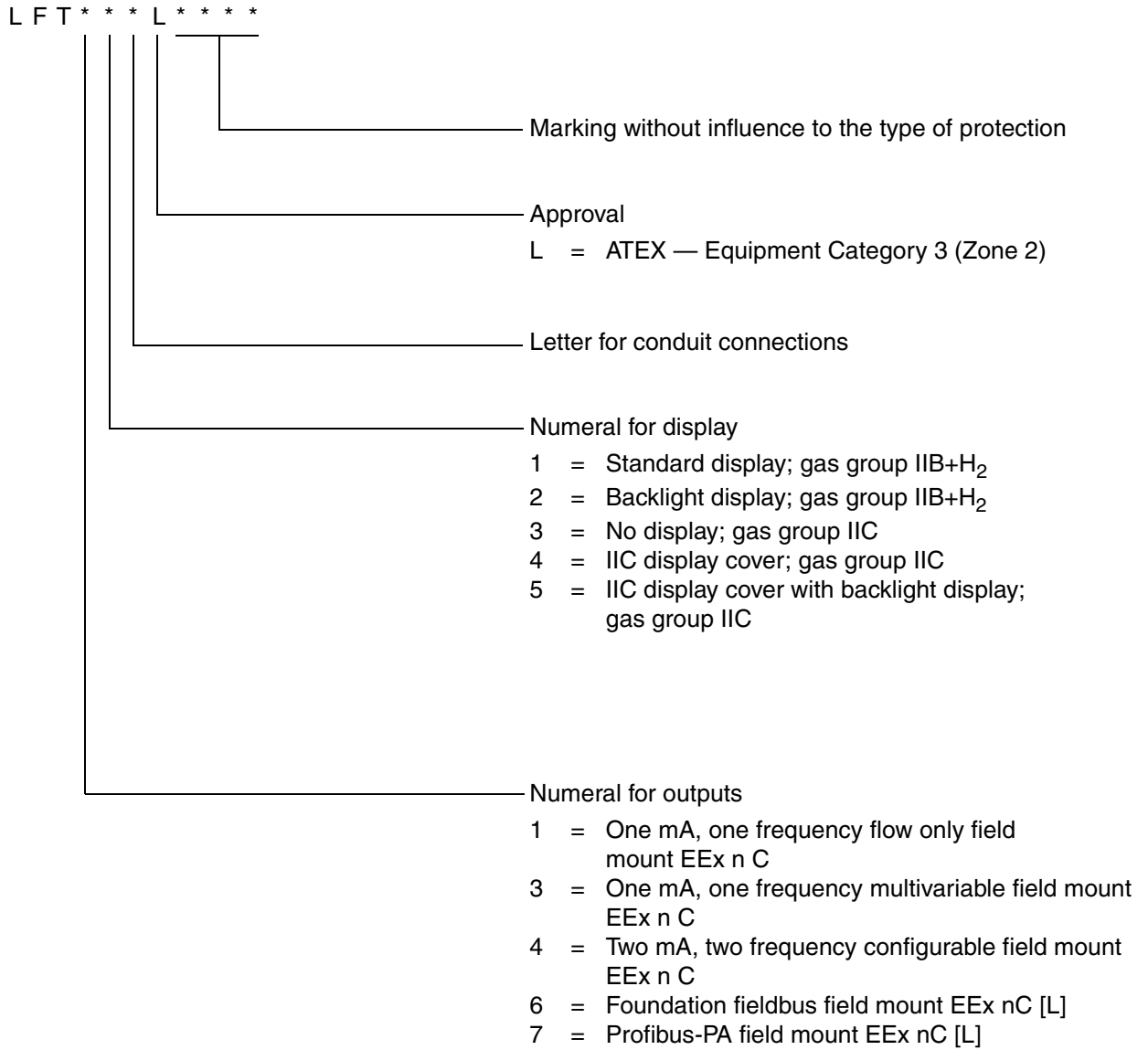
**EEx nC [L] IIB +H<sub>2</sub> T6**

**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<sub>2</sub>. 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
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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	li		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****	 II 3 G EEx nC IIB + H <sub>2</sub> T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X
LFT(6 or 7)(1 or 2)*L****	 II 3 G EEx nC [L] IIB + H <sub>2</sub> T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X
LFT(1, 3, or 4)(3, 4 or 5)*L****	 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****	 II 3 G EEx nC [L] IIC T6 II 3 D IP66/IP67 T65 °C KEMA 04 ATEX 1273 X

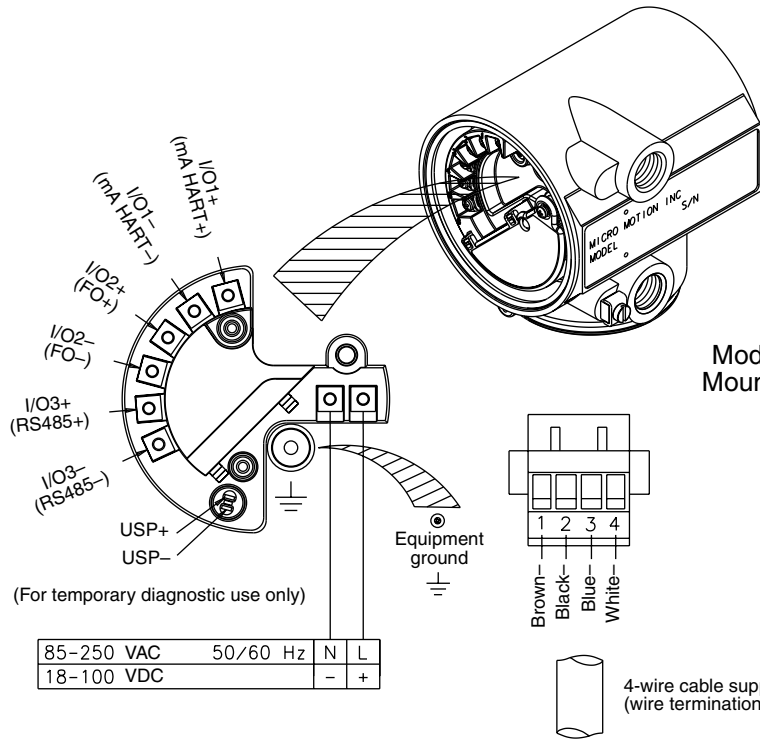
After de-energizing, delay 5 minutes before opening (models LFT(1, 3, 4, 6 or 7)\*\*L\*\*\*\* only).

**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 field-mount mA/FO transmitter to LF sensor



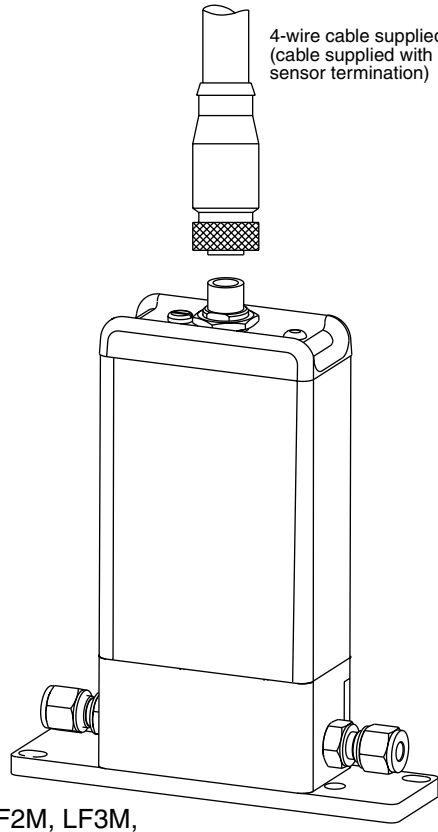
Hazardous Area  
 No Display  
 EEx nC IIC T6  
 With Display  
 EEx nC IIB + H<sub>2</sub> T6  
 EEx nC IIC T6

Refer to transmitter tag for complete hazardous area classification.

Model LFT Field Mount Transmitter

Hazardous Area  
 EEx nA IIC

Refer to sensor tag for complete hazardous area classification.

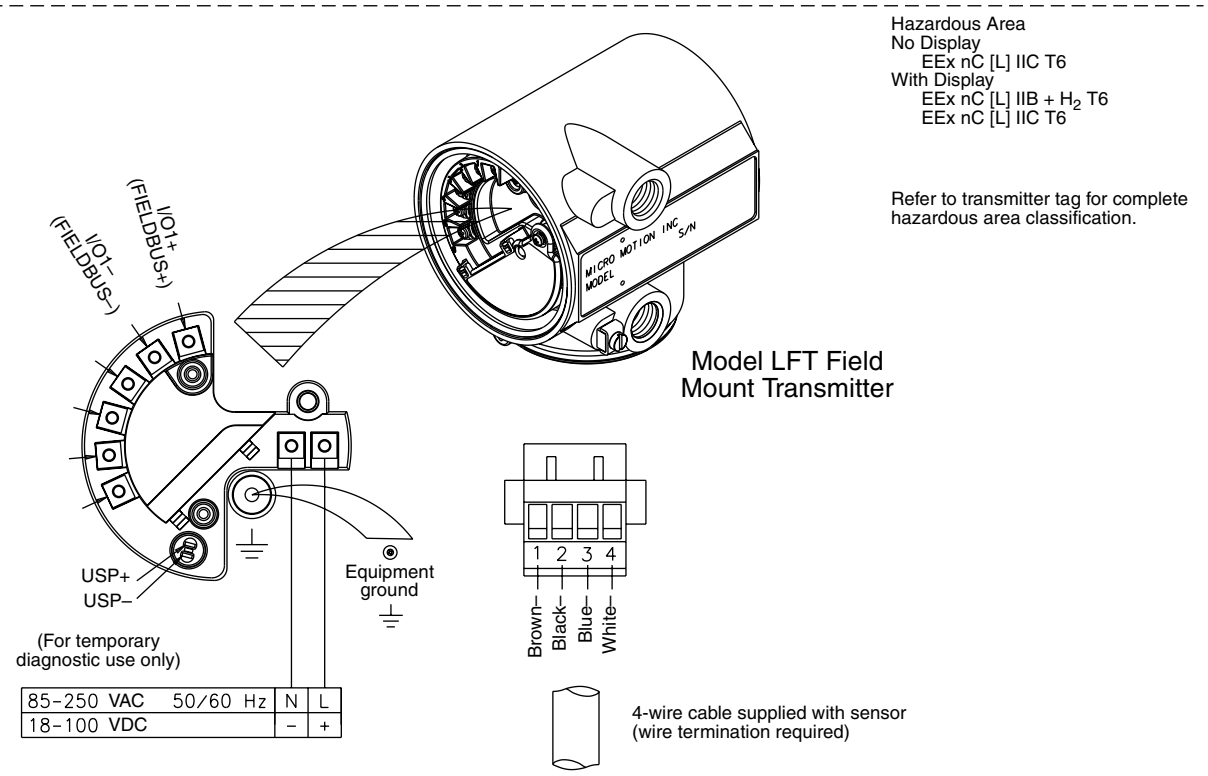


Models: LF2M, LF3M, LF4M

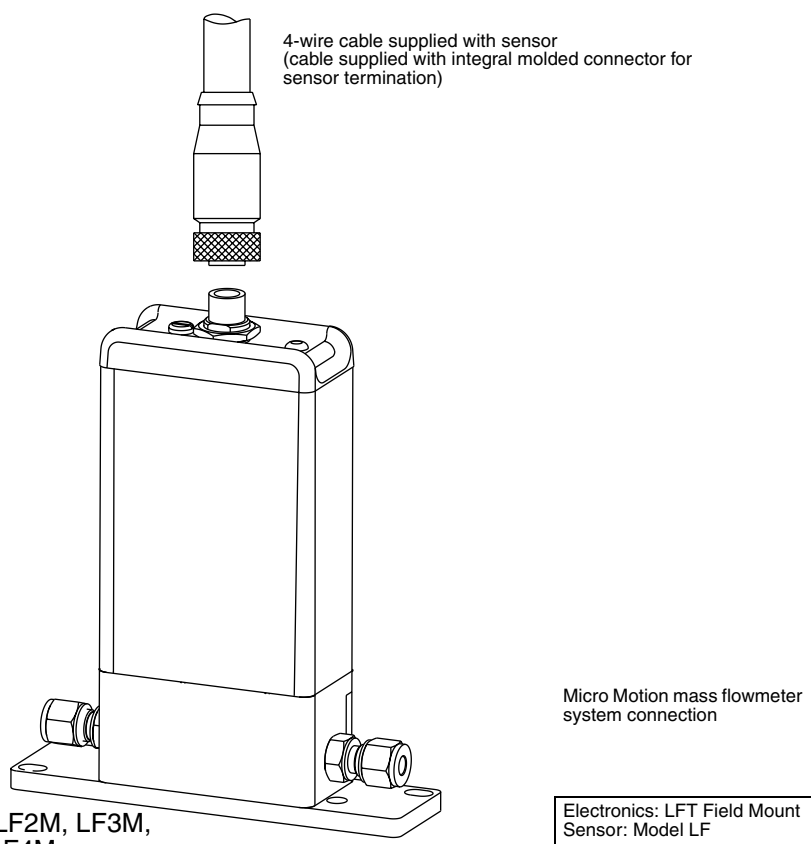
Electronics: LFT Field Mount  
 Sensor: Model LF

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# Model LFT field-mount fieldbus transmitter to LF sensor

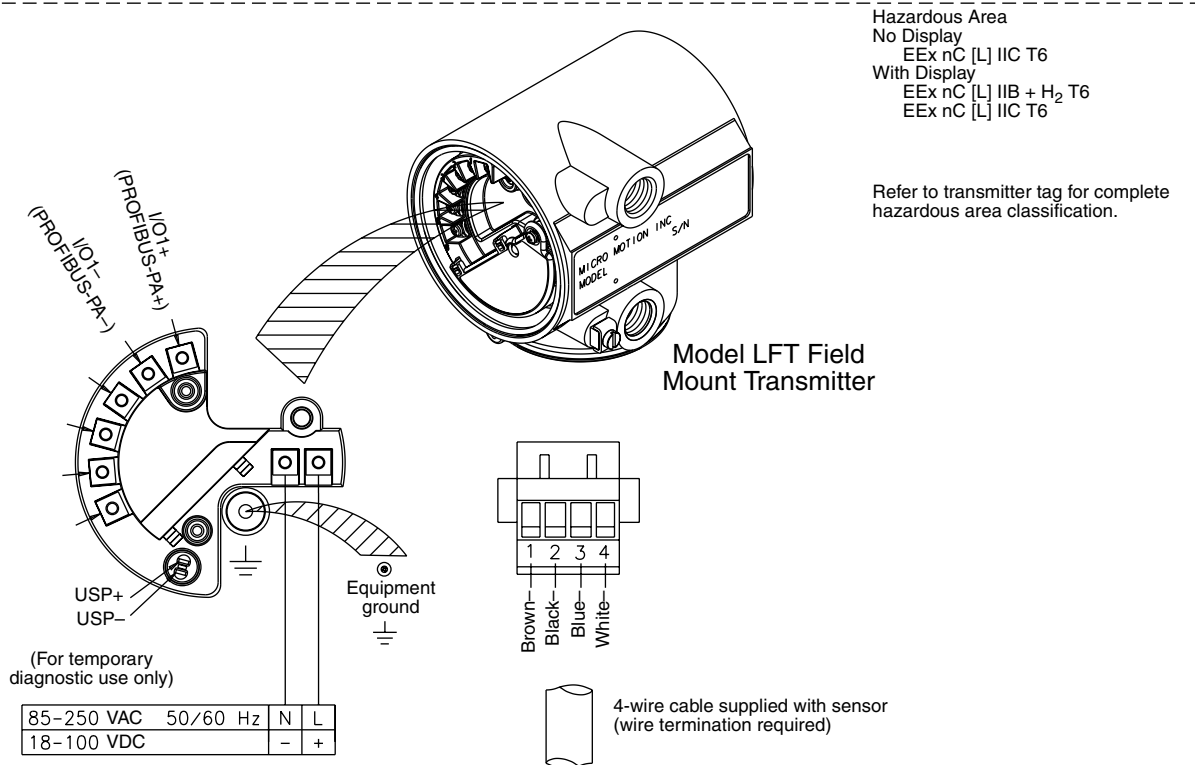


Hazardous Area  
 EEx nA IIC



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# Model LFT field-mount Profibus-PA transmitter to LF sensor

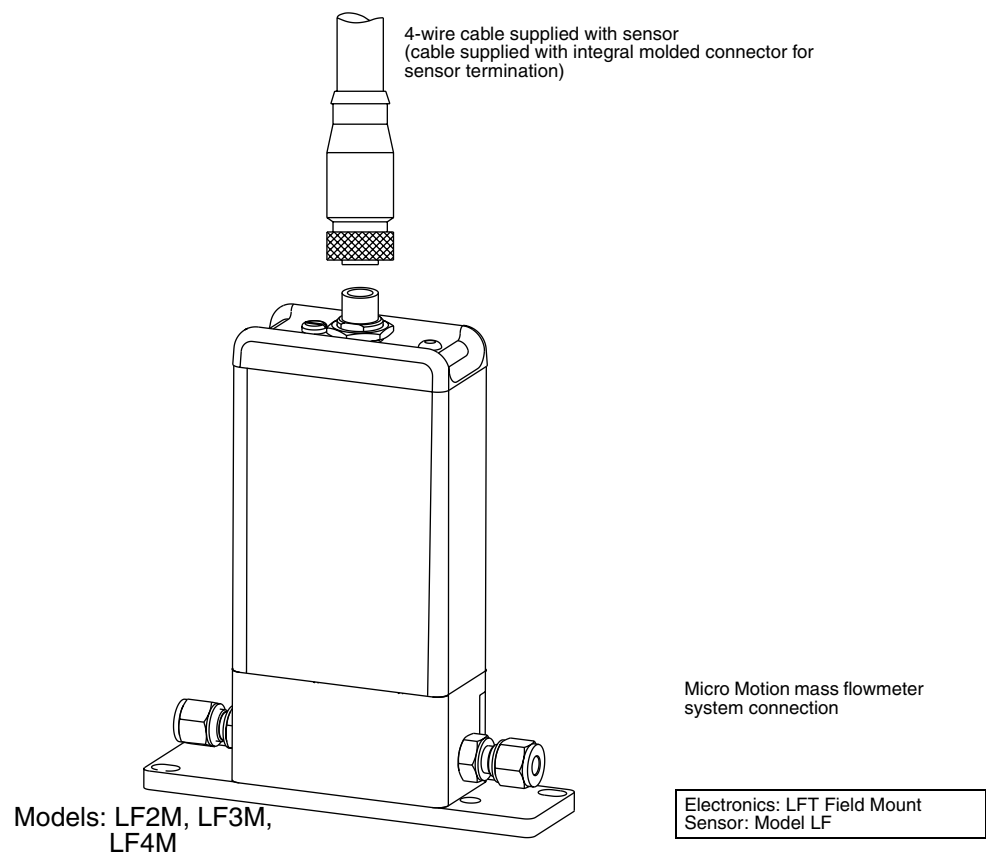


Hazardous Area  
 No Display  
 EEx nC [L] IIC T6  
 With Display  
 EEx nC [L] IIB + H<sub>2</sub> T6  
 EEx nC [L] IIC T6

Refer to transmitter tag for complete hazardous area classification.

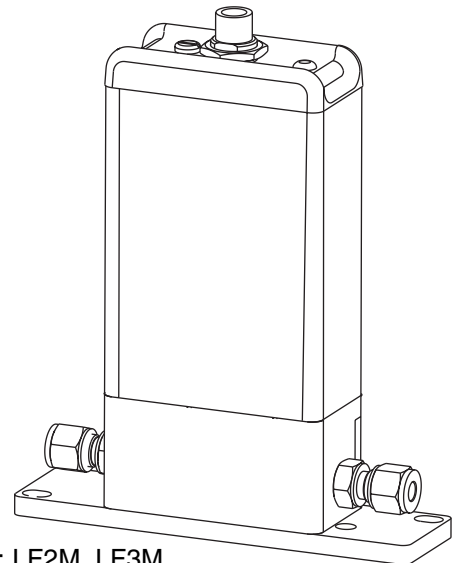
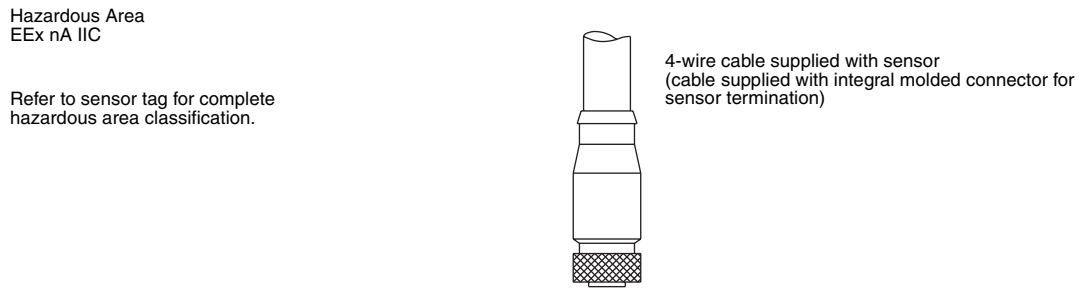
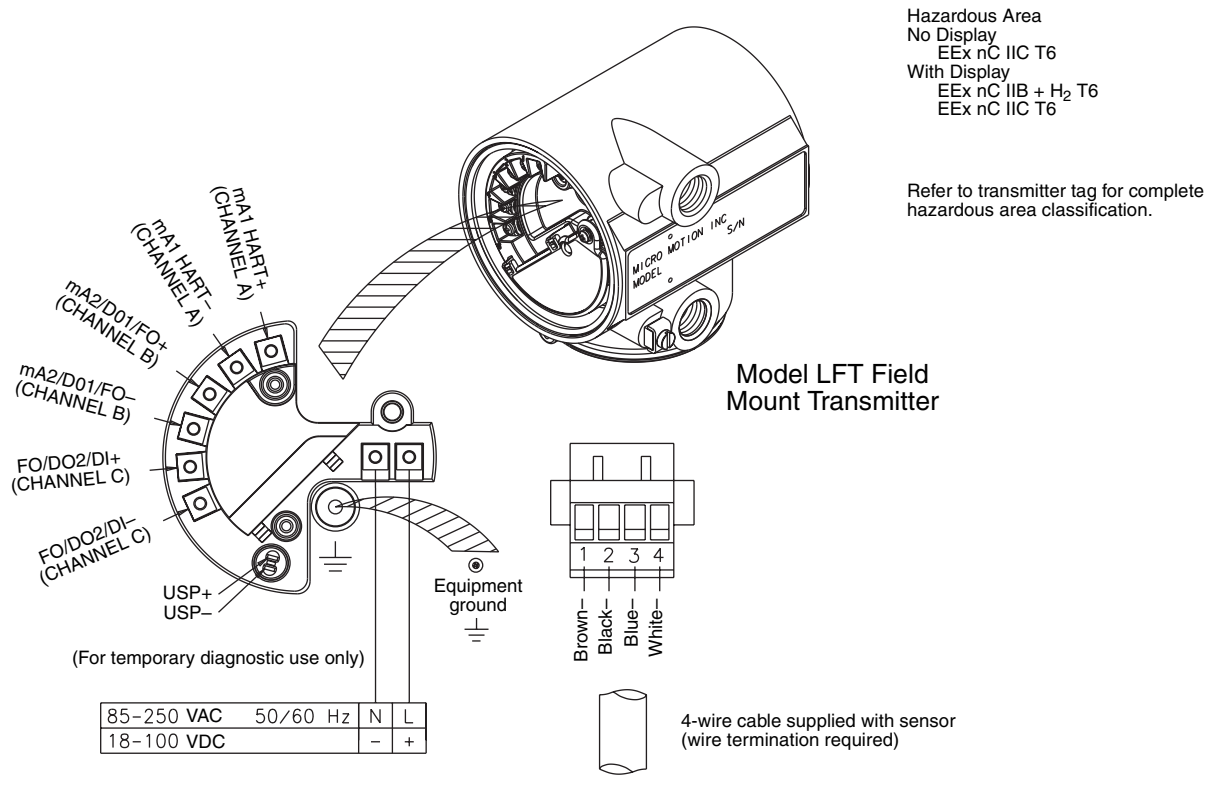
Model LFT Field Mount Transmitter

Hazardous Area  
 EEx nA IIC



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# Model LFT field-mount config-I/O transmitter to LF sensor



Micro Motion mass flowmeter system connection

Models: LF2M, LF3M, LF4M

Electronics: LFT Field Mount  
 Sensor: Model LF

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