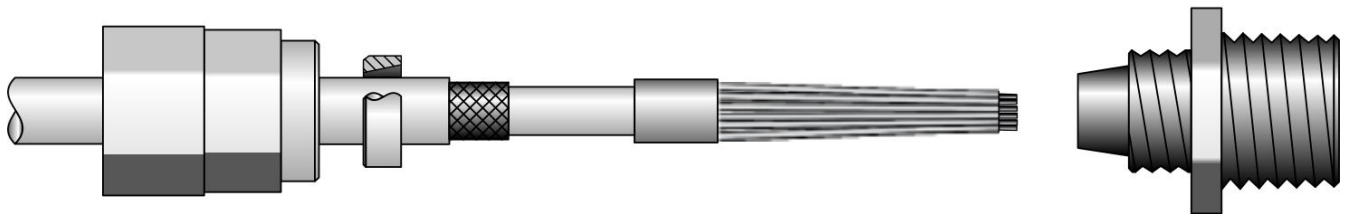


# Micro Motion™ UL-D-IS Installation Instructions, 9-wire

## Preparation



## Safety messages

Safety messages are provided throughout this manual to protect personnel and equipment. Read each safety message carefully before proceeding to the next step.

## Safety and approval information

This Micro Motion product complies with all applicable European directives when properly installed in accordance with the instructions in this manual. Refer to the EU Declaration of Conformity for directives that apply to this product. The following are available: the EU Declaration of Conformity, with all applicable European directives, and the complete ATEX installation drawings and instructions. In addition, the IECEx installation instructions for installations outside of the European Union and the CSA installation instructions for installations in North America are available at [Emerson.com](http://Emerson.com) or through your local Micro Motion support center.

Information affixed to equipment that complies with the Pressure Equipment Directive, can be found at [Emerson.com](http://Emerson.com). For hazardous installations in Europe, refer to standard EN 60079-14 if national standards do not apply.

## Other information

Troubleshooting information can be found in the [Configuration Manual](#). Product data sheets and manuals are available from the Micro Motion website at [Emerson.com](http://Emerson.com).

## Return policy

Follow Micro Motion procedures when returning equipment. These procedures ensure legal compliance with government transportation agencies and help provide a safe working environment for Micro Motion employees. If you fail to follow Micro Motion procedures, then Micro Motion will not accept your returned equipment.

Return procedures and forms are available on our web support site at [Emerson.com](http://Emerson.com), or by calling the Micro Motion Customer Service department.

## Emerson Flow customer service

Email:

- Worldwide: [flow.support@emerson.com](mailto:flow.support@emerson.com)
- Asia-Pacific: [APflow.support@emerson.com](mailto:APflow.support@emerson.com)

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# 1 Before you begin

## 1.1 About this document

Use this manual to ensure that any applicable Micro Motion flow meter installation complies with Underwriter Laboratories (UL) safety standards.

The information in this document assumes that users understand basic transmitter and sensor installation concepts and procedures.

This manual provides only information associated with installation of transmitters through UL-D-IS, 9-wire instructions. For complete information on flow meter installation, see the documentation provided with your sensor and transmitter.

## 1.2 Hazard messages

This document uses the following criteria for hazard messages based on ANSI standards Z535.6-2011 (R2017).

 **DANGER**

Serious injury or death will occur if a hazardous situation is not avoided.

 **WARNING**

Serious injury or death could occur if a hazardous situation is not avoided.

 **CAUTION**

Minor or moderate injury will or could occur if a hazardous situation is not avoided.

---

**NOTICE**

Data loss, property damage, hardware damage, or software damage can occur if a situation is not avoided. There is no credible risk of physical injury.

---

**Physical access**

 **WARNING**

Unauthorized personnel can potentially cause significant damage and/or misconfiguration of end users' equipment. Protect against all intentional or unintentional unauthorized use.

Physical security is an important part of any security program and fundamental to protecting your system. Restrict physical access to protect users' assets. This is true for all systems used within the facility.

## 1.3 Hazardous area installations

If your cable will be installed in a hazardous area, ensure that it meets the hazardous area requirements.

 **WARNING**

Failure to maintain intrinsic safety in a hazardous area could cause an explosion resulting in injury or death.

To keep sensor wiring intrinsically safe:

- Keep intrinsically safe (IS) sensor wiring separate from power supply wiring and output wiring.
- Do not install power cable in the same conduit or cable tray as flow meter cable.
- Use this document with the appropriate approvals documentation. These manuals are shipped with the flow meter or available at [Emerson.com](https://www.emerson.com).
- For hazardous area installations in Europe, refer to standard EN 60079-14 if national standards do not apply.

## 2 1700 and 2700 transmitters

### 2.1 1700 and 2700 transmitter outputs

#### List of drawings

Transmitter	Drawing
1700/2700 mA Outputs	EB-3600478, Revision DA
1700/2700 intrinsically safe outputs	EB-3600630, Revision EA
2700 configurable inputs and outputs	EB-3600666, Revision CA
1700/2700 FOUNDATION™ fieldbus outputs	EB-3600475, Revision G
1700/2700 fieldbus (FISCO)	
1700/2700 Profibus-PA outputs	EB-3600472, Revision G
2750 configurable inputs and outputs	EB-20011794, Revision A

## 2.1.1 1700/2700 mA Outputs

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MODEL 1700/2700  
WITH ANALOG OUTPUTS

Installation Instructions  
Type UL-D-IS

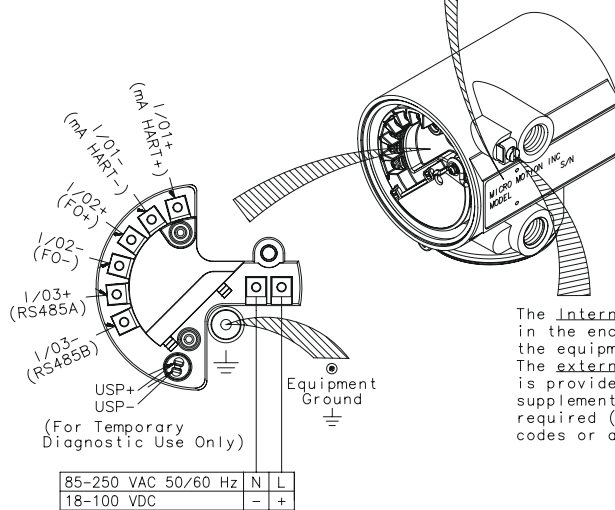
### MODEL 1700/2700 WITH ANALOG OUTPUTS IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR DIVISION 2 OR INTRINSIC SAFETY)

DIV 2 NON-INCENDIVE PARAMETERS		mA HART	FO	RS485
V <sub>oc</sub> (V <sub>dc</sub> )		24	24	3.1
I <sub>sc</sub> (mA)		25	11	1.0
P <sub>o</sub> (W)		-	-	-
C <sub>a</sub> ( $\mu$ F)	A,B	0.345	0.345	-
	C	2.06	2.06	-
	D	8.25	8.25	-
L <sub>a</sub> (H)	A,B	0.128	0.661	-
	C	0.384	1	-
	D	1	1	-
V <sub>max</sub> (V <sub>dc</sub> )		-	30	12
I <sub>max</sub> (mA)		-	500	250
C <sub>i</sub> ( $\mu$ F)		-	0.0	0.0005
L <sub>i</sub> ( $\mu$ H)		-	0.0	0.0

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G  
Temp. Code T4A  
Or Unclassified Locations

Note:  
Hazardous area classification on an integrally mounted 1700/2700 transmitter can be limited by hazardous area classification of the sensor. Refer to sensor tag.



The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Note:  
300V insulation is required between power circuits and communication circuits. For field wiring, use 14/22 AWG wire with an 11 in-lb. torque value.

(WARNING: DO NOT REMOVE OR REPLACE FUSES WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS OF FLAMMABLE SUBSTANCES)

(WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS)

Electronics: 1700/2700 ANALOG

EB-3600478 Rev. DA  
SHT 1 OF 1

## 2.1.2 1700/2700 intrinsically safe outputs

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MODEL 1700/2700  
WITH I.S. OUTPUTS

Installation Instructions  
Type UL-D-IS

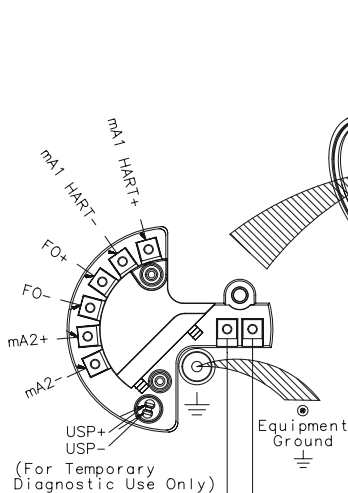
### MODEL 1700/2700 WITH I.S. OUTPUTS IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY  
FOR DIVISION 2 OR INTRINSIC SAFETY)

DIVISION 1 I.S. OUTPUT ENTITY PARAMETERS			DIVISION 2 NON-INCENDIVE PARAMETERS		
	mA1 HART, mA2	FO		mA1 HART, mA2	FO
VMAX	30 Vdc	30 Vdc	VMAX	30 Vdc	30 Vdc
I <sub>max</sub>	300 mA	100 mA			
P <sub>max</sub>	1.0W	0.75W			
C <sub>i</sub>	0.0005µF	0.0005µF	C <sub>i</sub>	0.0005µF	0.0005µF
L <sub>i</sub>	0.0µH	0.0µH	L <sub>i</sub>	0.0µH	0.0µH

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G  
Temp. Code T4  
Or Unclassified Locations

Note:  
Hazardous area classification on an integrally mounted 1700/2700 transmitter can be limited by hazardous area classification of the sensor. Refer to sensor tag.



85-250 VAC	50/60 Hz	N	L
18-100 VDC		-	+

Warning:  
To reduce the risk of ignition of hazardous atmospheres, listed explosionproof cable seals or conduit seals must be installed within 2 inches of the wiring compartment enclosure.

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

- Notes:
1. Install intrinsically safe systems in accordance with this drawing and Article 504 of the National Electrical Code, NFPA 70. Refer to ISA RP12.6 for recommended practices for installing intrinsically safe equipment.
  2. 300V insulation is required between power circuits and communication circuits. For field wiring, use 14/22 AWG wire with an 11 in-lb. torque value.

(WARNING: DO NOT REMOVE OR REPLACE FUSES WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS OF FLAMMABLE SUBSTANCES)

(WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS)

Electronics: 1700/2700 I.S. OUTPUT

EB-3600630 Rev. EA  
SHT 1 OF 1

## 2.1.3 2700 configurable inputs and outputs

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MODEL 2700  
WITH CONFIG I/O

Installation Instructions  
Type UL-D-IS

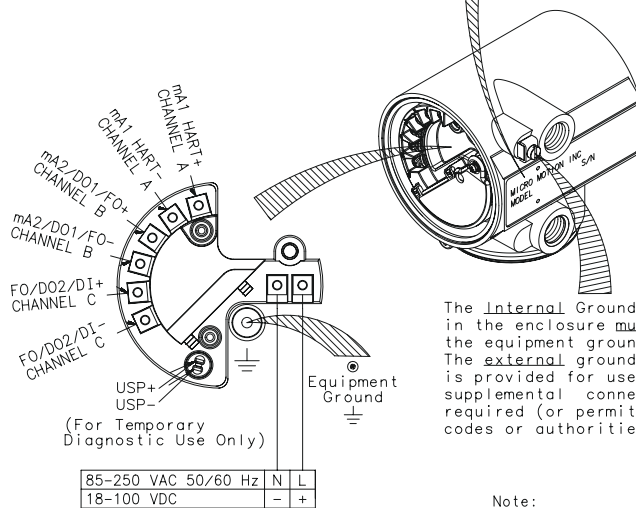
### MODEL 2700 WITH CONFIG I/O IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR  
SUITABILITY FOR DIVISION 2 OR INTRINSIC SAFETY)

DIV 2 NON-INCENDIVE PARAMETERS		mA HART	CHB	CHC
V <sub>oc</sub> (Vdc)		24	15	15
I <sub>sc</sub> (mA)		25	25	7.0
P <sub>o</sub> (W)		-	-	-
C <sub>a</sub> ( $\mu$ F)	A,B	0.345	2.25	2.25
	C	2.06	15.15	15.15
	D	8.25	75	75
L <sub>a</sub> (H)	A,B	0.096	0.096	1
	C	0.384	0.384	1
	D	0.768	0.768	1
V <sub>max</sub> (Vdc)		-	30	30
I <sub>max</sub> (mA)		-	500	500
C <sub>i</sub> ( $\mu$ F)		-	0.0011	0
L <sub>i</sub> ( $\mu$ H)		-	4.0	4.0

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G  
Temp. Code T4A  
Or Unclassified Locations

Note:  
Hazardous area classification  
on an integrally mounted 2700  
transmitter can be limited by  
hazardous area classification of  
the sensor. Refer to sensor tag.



The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Note:  
300V insulation is required between power circuits and communication circuits. For field wiring, use 14/22 AWG wire with an 11 in-lb. torque value.

(WARNING: DO NOT REMOVE OR REPLACE FUSES WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS OF FLAMMABLE SUBSTANCES)

(WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS)

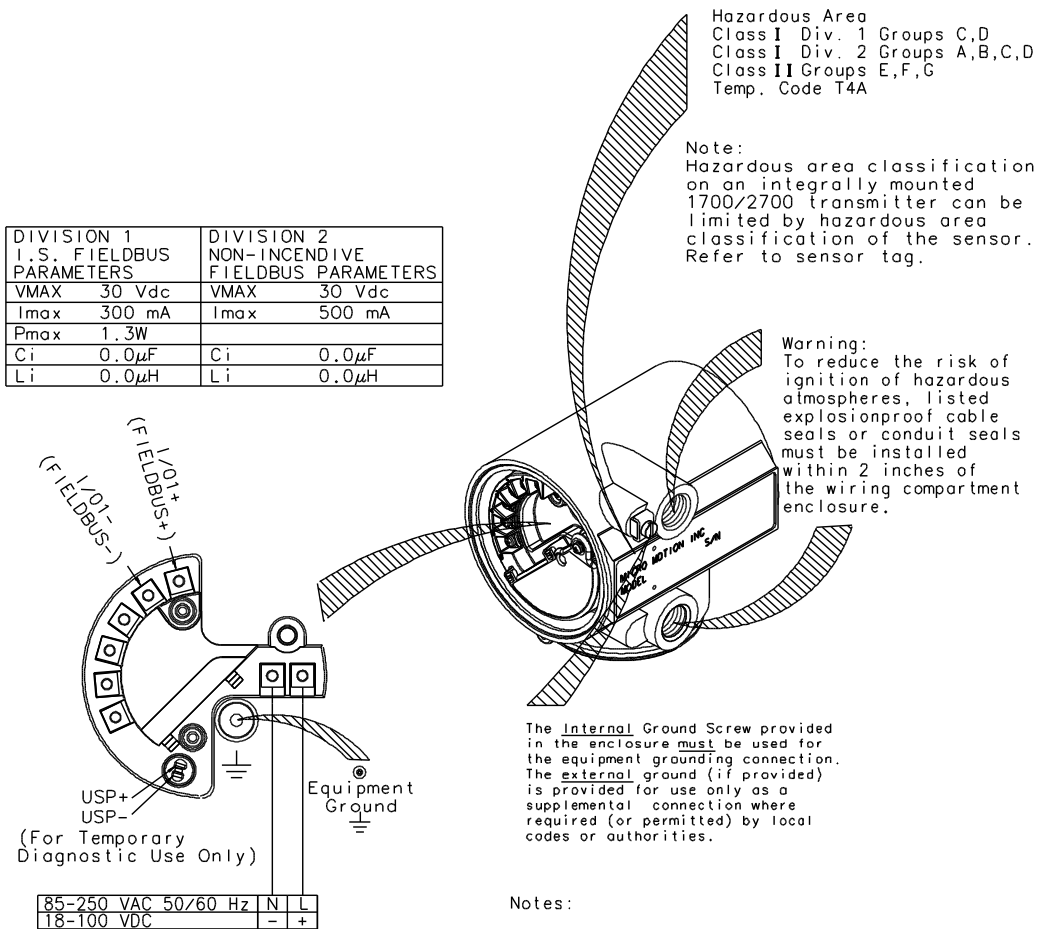
Electronics: 2700 CONFIG I/O

EB-3600666 Rev. CA  
SHT 1 OF 1

## 2.1.4 1700/2700 FOUNDATION™ fieldbus outputs

MODEL 1700/2700 WITH FIELDBUS IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)



Electronics: 1700/2700 FIELDBUS

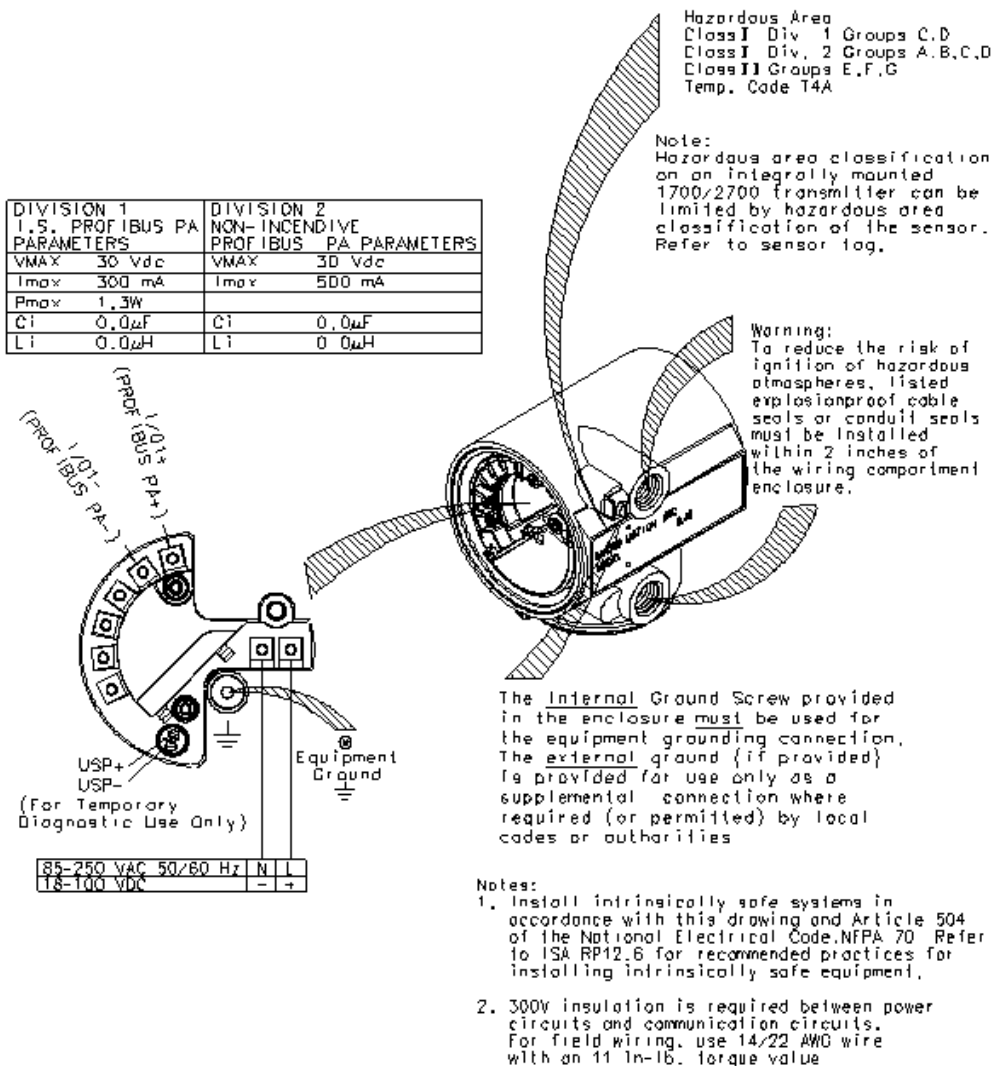
EB-3600475 Rev..G  
SHT 1 OF 1

## 2.1.5 1700/2700 fieldbus (FISCO)

## 2.1.6 1700/2700 Profibus-PA outputs

### MODEL 1700/2700 WITH PROFIBUS PA IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)



Electronics' 1700/2700 PROFIBUS PA

EB-3600472 Rev G  
 SHT 1 OF 1



## 2.2 1700/2700 integral core processor installations

### List of drawings

Installation	Drawing
1700/2700 with integral core processor and CMF, F, T, D, or DL sensors	EB-3600420, Rev EA
1700/2700 with integral core processor and CMF300A sensor	EB-3600533, Revision D
1700/2700 with integral core processor and CMF400 sensor with booster amplifier	EB-3006198, Revision C
1700/2700 with integral core processor and D600 sensor	EB-1005116, Revision B
1700/2700 with integral core processor and DT sensor	EB-3600532 Rev D

## 2.2.1 1700/2700 with integral core processor and CMF, F, T, D, or DL sensors

This drawing does not apply to the D600, DT, CMF300A, or CMF400 with booster amplifier sensors.

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MODEL 1700/2700 REMOTE MOUNT  
INSTALLATION WITH INTEGRAL MOUNTED  
CORE PROCESSOR

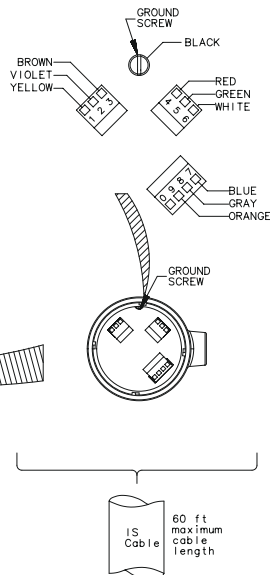
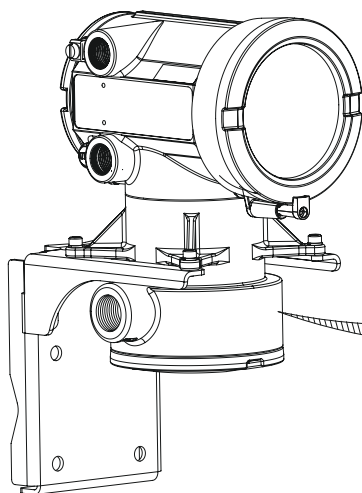
Installation Instructions  
Type UL-D-IS

MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

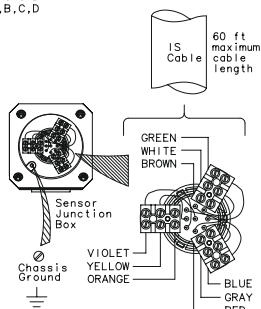
Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

(WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation of I/O, power and ground terminals, refer to appropriate UL-D-IS installation instructions



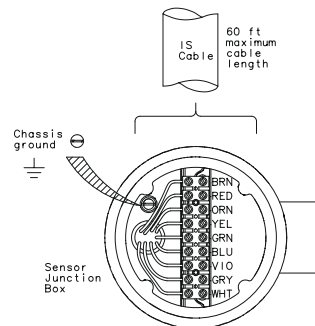
Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G



MODEL  
CMF010, CMF025, CMF050  
CMF100, CMF200, CMF300  
T075, T100, T150  
F025, F050, F100, F200

Supplied as intrinsically safe

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G



MODEL  
DS025, DH025, DH038, DS040,  
DS065, DL065, DS100, DH100,  
DL100, DS150, DH150, DL200,  
DS300, DH300,

Supplied as intrinsically safe

Electronics: 1700/2700

EB-3600420 Rev. EA  
SHT 1 OF 1

## 2.2.2 1700/2700 with integral core processor and CMF300A sensor

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MODEL 1700/2700 REMOTE MOUNT  
INSTALLATION WITH INTEGRAL MOUNTED  
CORE PROCESSOR

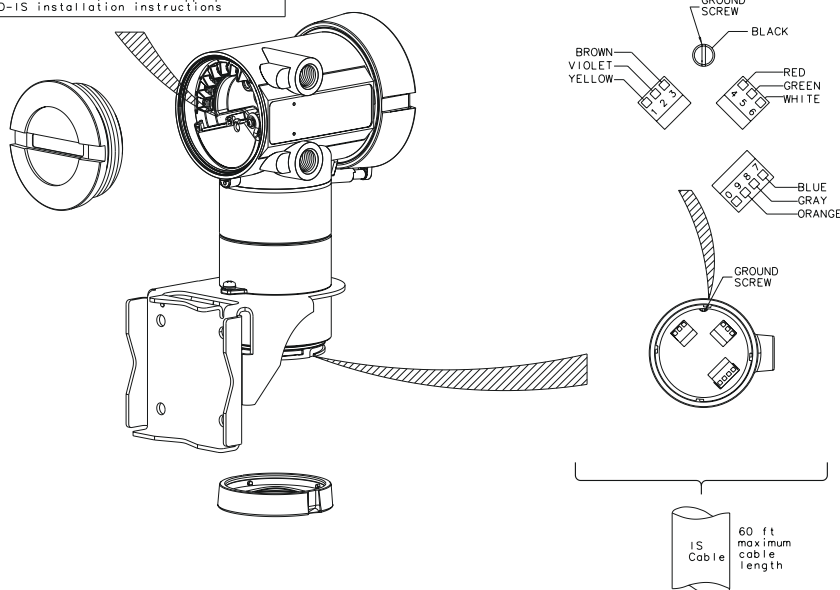
Installation Instructions  
Type UL-D-IS

MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation of I/O, power and ground terminals, refer to appropriate UL-D-IS installation instructions



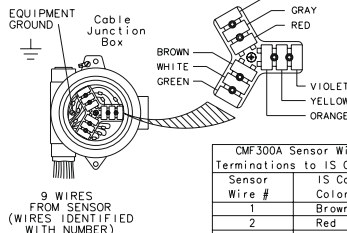
Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

60 ft maximum cable length  
IS Cable

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.



CMF300A Sensor Wire Terminations to IS Cable	
Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

CAUTION:

To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics: 1700/2700

EB-3600533 Rev. D  
SHT 1 OF 1

## 2.2.3 1700/2700 with integral core processor and CMF400 sensor with booster amplifier

MODEL 1700/2700 REMOTE MOUNT  
 INSTALLATION WITH INTEGRAL MOUNTED  
 CORE PROCESSOR TO SENSOR CMF400 JBOX

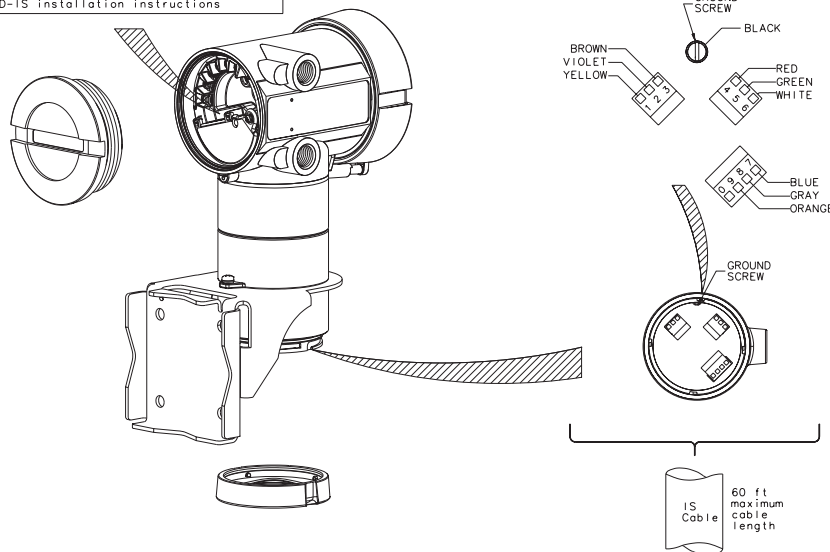
Installation Instructions  
 Type UL-D-IS

MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

Hazardous Area  
 Class I Div. 1 Groups C and D  
 Class I Div. 2 Groups A,B,C,D  
 Class II Groups E,F,G

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation of I/O, power and ground terminals, refer to appropriate UL-D-IS installation instructions



Hazardous Area  
 Class I Div. 1 Groups C,D  
 Class I Div. 2 Groups A,B,C,D  
 Class II Groups E,F,G

For model CMF400\*\*\*N, followed by P followed by \*U\*AZ\* see additional installation requirements on drawing EB-3005811

Allowable process fluid temperature range for integrally mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{max} \leq +60^{\circ}\text{C}$ .

Power 3/4"-14 NPT  
 Conduit Seal  
 Required within 18" of enclosure. To be sealed after wiring (customer supplied)

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground

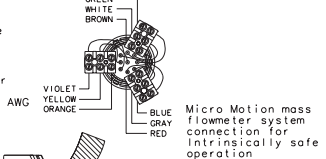
Copper wire 20-14 AWG

Explosion-Proof housing

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Intrinsically Safe Terminals

Install per National Electric Code Article 504.



Model: CMF400

Electronics: 1700/2700  
 9 wire  
 Sensor: CMF400

EB-3006198 Rev. C

## 2.2.4 1700/2700 with integral core processor and D600 sensor

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MODEL 1700/2700 REMOTE MOUNT  
INSTALLATION WITH INTEGRAL MOUNTED  
CORE PROCESSOR TO SENSOR D600 JBOX

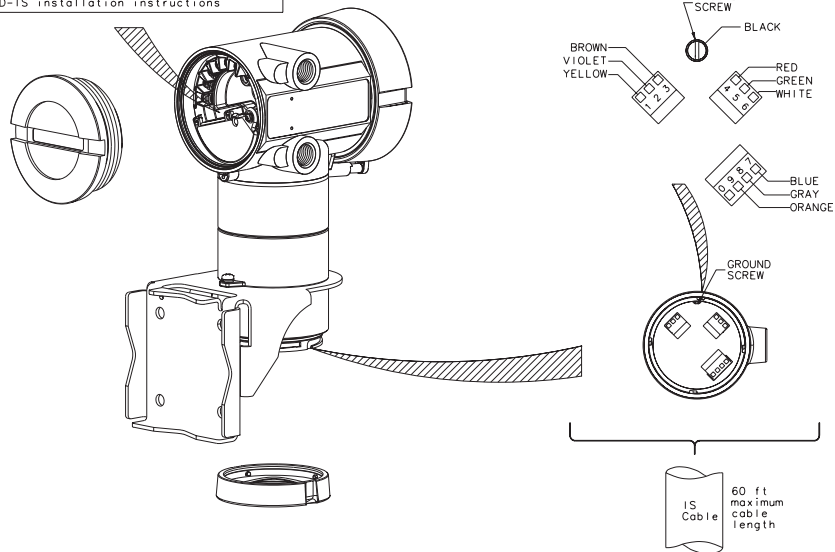
Installation Instructions  
Type UL-D-IS

MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation of I/O, power and ground terminals, refer to appropriate UL-D-IS installation instructions



Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

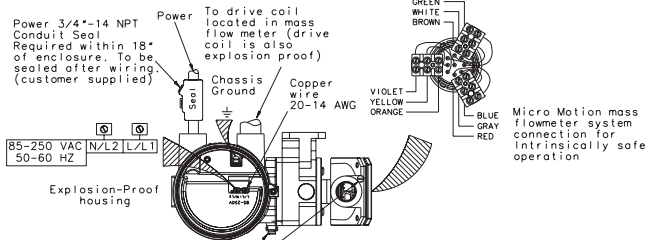
For model D600S\*\*\*S, followed by P followed by \*U\*AZ\* see additional installation requirements on drawing EB-1005077

60 ft maximum cable length

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Allowable process fluid temperature range for integrally mounted booster amplifier is  $-20^{\circ}\text{C} \leq T_{max} \leq +60^{\circ}\text{C}$ .

Intrinsically Safe Terminals  
Install per National Electric Code Article 504.



The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Model: D600

Electronics: 1700/2700  
9 wire  
Sensor: D600

EB-1005116 Rev. B

## 2.2.5 1700/2700 with integral core processor and DT sensor

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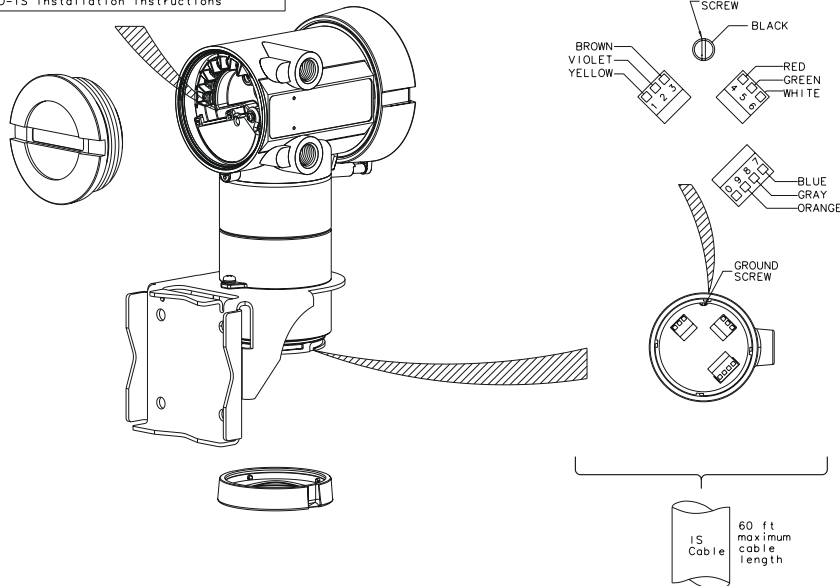
MODEL 1700/2700 REMOTE MOUNT  
INSTALLATION WITH INTEGRAL MOUNTED  
CORE PROCESSOR

Installation Instructions  
Type UL-D-1S

MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G (WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation of I/O, power and ground terminals, refer to appropriate UL-D-1S installation instructions

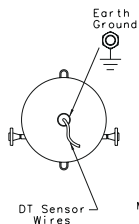
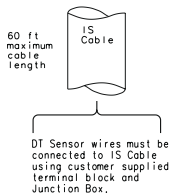


Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.



DT Sensor Wire Terminations to IS Cable	
DT Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

Models: DT65, DT100, DT150  
Supplied as intrinsically safe.

CAUTION:  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics: 1700/2700

EB-3600532 Rev. D  
SHT 1 OF 1

## 2.3 1700/2700 remote core processor installations

### List of drawings

Installation	Drawing
1700/2700 with remote core processor and CMF, F, T, D, or DL sensors	EB-3600676 Revision DA
1700/2700 with remote core processor and CMF300A sensor	EB-3600678, Revision D
1700/2700 with remote core processor and CMF400 sensor with booster amplifier	EB-3007060, Revision C
1700/2700 with remote core processor and D600 sensor	EB-1005118, Revision B
1700/2700 with remote core processor and DT sensor	EB-3600677, Revision C

## 2.3.1 1700/2700 with remote core processor and CMF, F, T, D, or DL sensors

This drawing does not apply to the D600, DT, CMF300A, or CMF400 with booster amplifier sensors.

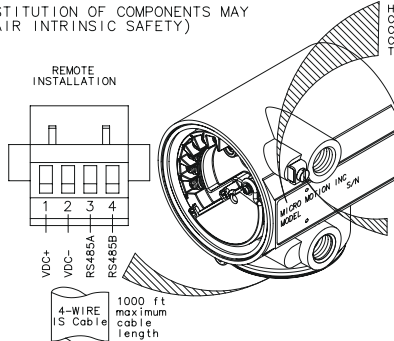
MODEL 1700/2700 REMOTE MOUNT WITH REMOTE CORE PROCESSOR AND SENSOR WITH JBOX  
Installation Instructions Type UL-D-IS

REMOTE MOUNT MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation including I/O, power, gland and hazardous area location, refer to appropriate 1700/2700 output option UL-D-IS installation instructions

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Ca (µF)	A,B N/A C 2.06 D 8.5	1.21 8.32 33.75
La (µH)	A,B N/A C 151 D 607	252 1000 2100



Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G  
Temp. Code T4A

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

### INSTALLATION NOTES:

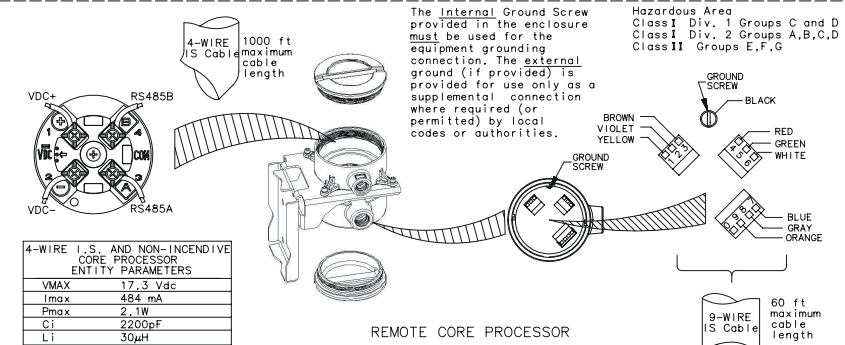
ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc <=	Vmax
Isc <=	Imax
(Voc x Isc) / 4 <=	Pmax
Ca >=	Ccable + C11 + C12 + ... + Cin
La >=	Lcable + L11 + L12 + ... + Lin

\*The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.

\*The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft Cable Inductance = 0.20µH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

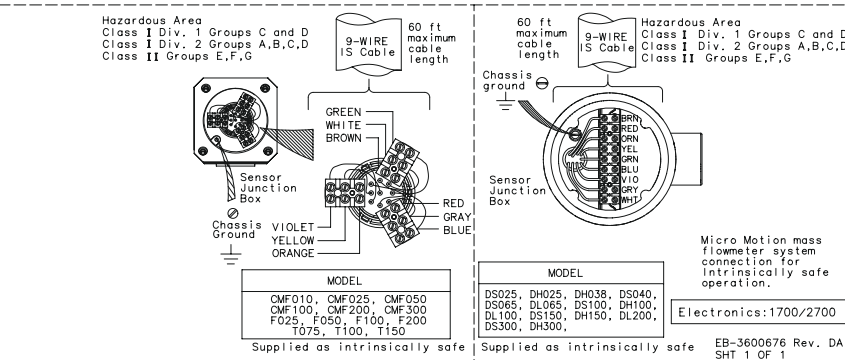


The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
VMAX	17.3 Vdc
Imax	484 mA
Pmax	2.1W
C1	2200pF
L1	30µH

REMOTE CORE PROCESSOR



Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

60 ft maximum cable length

Hazardous Area  
Class I Div. 1 Groups C and D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

60 ft maximum cable length

MODEL
CMF010, CMF025, CMF050 CMF100, CMF200, CMF300 F025, F050, F100, F200 T025, T100, T150

Supplied as intrinsically safe

MODEL
DS025, DH025, DH038, DS040, DS065, DL065, DS100, DH100, DL100, DS150, DH150, DL200, DS300, DH300.

Supplied as intrinsically safe

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics:1700/2700

EB-3600676 Rev. DA  
SHT 1 OF 1



## 2.3.2 1700/2700 with remote core processor and CMF300A sensor

MODEL 1700/2700 REMOTE MOUNT WITH REMOTE CORE PROCESSOR AND SENSOR WITH JBOX

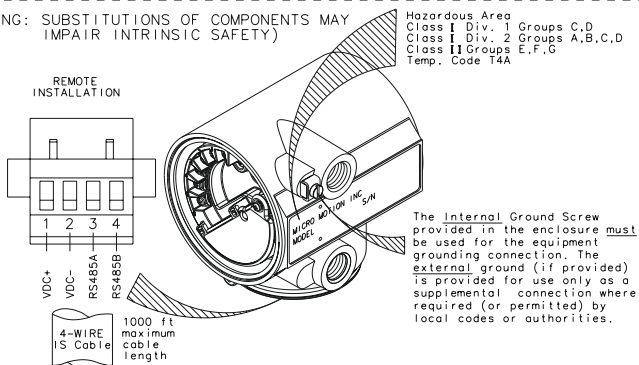
Installation Instructions  
Type UL-D-IS

REMOTE MOUNT MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation including I/O, power, gland and hazardous area location, refer to appropriate 1700/2700 output option UL-D-IS installation instructions

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Co (μF)	A, B C	N/A 1.21 2.06 8.32
La (μH)	A, B C	N/A 252 151 1000
	D	607 2100



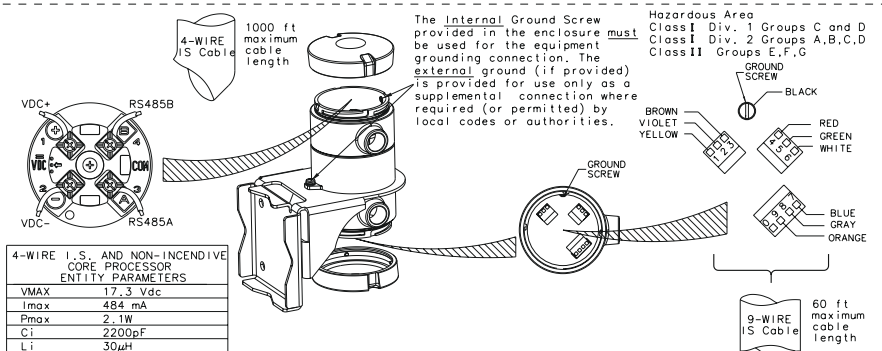
Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G  
Temp. Code T4A

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

### INSTALLATION NOTES:

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc	< = Vmax
Isc	< = Imax
(Voc x Isc) / 4	< = Pmax
Co	> = Ccable + C1 + C2 + ... + Cin
La	> = Lcable + L1 + L2 + ... + Ln

- The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.
  - The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.
- If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft
- This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.



4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
VMAX	17.3 Vdc
Imax	484 mA
Pmax	2.1W
Ci	2200pF
Li	30μH

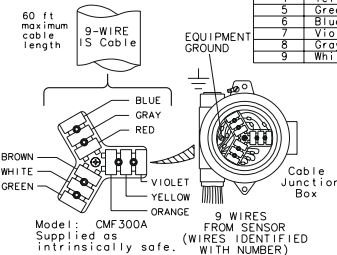
Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.



CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics:1700/2700

EB-3600678 Rev. D  
SHT 1 OF 1

## 2.3.3 1700/2700 with remote core processor and CMF400 sensor with booster amplifier

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ALL RIGHTS RESERVED.

MODEL 1700/2700 REMOTE MOUNT WITH  
REMOTE CORE PROCESSOR AND  
SENSOR WITH JBOX

Installation Instructions  
Type UL-D-IS

REMOTE MOUNT MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation including I/O, power, gland and hazardous area location, refer to appropriate 1700/2700 output option UL-D-IS installation instructions

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
V <sub>oc</sub> (Vdc)	17.22	17.22
I <sub>sc</sub> (mA)	484	484
P <sub>o</sub> (W)	2.05	2.05
C <sub>a</sub> (μF)	A, B	N/A
	C	2.06
L <sub>a</sub> (μH)	D	8.5
	A, B	N/A
	C	151
	D	607

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

**INSTALLATION NOTES:**

ASSOCIATED APPARATUS PARAMETER LIMITS	
V <sub>oc</sub> <=	V <sub>max</sub>
I <sub>sc</sub> <=	I <sub>max</sub>
(V <sub>oc</sub> x I <sub>sc</sub> ) / 4 <=	P <sub>max</sub>
C <sub>a</sub> >=	C <sub>able</sub> + C <sub>i1</sub> + C <sub>i2</sub> + ... + C <sub>in</sub>
L <sub>a</sub> >=	L <sub>able</sub> + L <sub>i1</sub> + L <sub>i2</sub> + ... + L <sub>in</sub>

- The total C<sub>i</sub> is equal to the sum of all C<sub>i</sub>'s of all devices on the network. C<sub>able</sub> is the total capacitance of all cable on the network.
- The total L<sub>i</sub> is equal to the sum of all L<sub>i</sub>'s of all devices on the network. L<sub>able</sub> is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
V <sub>MAX</sub>	17.3 V <sub>DC</sub>
I <sub>max</sub>	484 mA
P <sub>max</sub>	2.1W
C <sub>i</sub>	2200pF
L <sub>i</sub>	30μH

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Hazardous Area  
Class I Div. 1 Groups C and D  
Class II Div. 2 Groups A, B, C, D  
Class III Groups E, F, G

For model CMF400\*\*\*N, followed by P followed by \*U\* or \*A\* see additional installation requirements on drawing EB-3005811

Allowable process fluid temperature range for integrally mounted booster amplifier is -40°C ≤ T<sub>max</sub> ≤ +60°C.

Power 3/4"-14 NPT Conduit Seal Required within 18" of enclosure. To be sealed after wiring (customer supplied)

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground

Copper wire 20-14 AWG

85-250 VAC 50-60 HZ

Explosion-Proof housing

Intrinsically Safe Terminals: GREEN, WHITE, BROWN, VIOLET, YELLOW, ORANGE, BLUE, GRAY, RED

Micro Motion mass flowmeter system connection for intrinsically safe operation

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Model: CMF400

Electronics: 1700/2700  
Sensor: CMF400

EB-3007060 Rev. C

## 2.3.4 1700/2700 with remote core processor and D600 sensor

MODEL 1700/2700 REMOTE MOUNT WITH REMOTE CORE PROCESSOR AND SENSOR WITH JBOX

Installation Instructions  
Type UL-D-IS

REMOTE MOUNT MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation including I/O, power, gland and hazardous area location, refer to appropriate 1700/2700 output option UL-D-IS installation instructions

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Co (μF)	A, B	N/A
	C	2.06
	D	8.5
		33.75
Lo (μH)	A, B	N/A
	C	151
	D	607
		2100

INSTALLATION NOTES:

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc	<= Vmax
Isc	<= Imax
$(Voc \times Isc) / 4 <= Pmax$	
Ca	>= Ccable + C1 + C2 + ... + Cin
Lo	>= Lcable + L1 + L2 + ... + Lin

\*The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.

\*The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

REMOTE INSTALLATION

1 2 3 4

VDC+ VDC- RS485A RS485B

4-WIRE IS Cable 1000 ft maximum cable length

Hazardous Area Class I Div. 1 Groups C,D Class II Div. 2 Groups A,B,C,D Class III Groups E,F,G Temp. Code 14A

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
VMAX	17.3 Vdc
Imax	484 mA
Pmax	2.1W
C1	2200pF
L1	30μH

Hazardous Area Class I Div. 1 Groups C,D Class II Div. 2 Groups A,B,C,D Class III Groups E,F,G

GROUND SCREW BLACK

BROWN RED

VIOLET GREEN

YELLOW WHITE

GROUND SCREW BLUE

GRAY ORANGE

9-WIRE IS Cable 60 ft maximum cable length

Hazardous Area Class I Div. 1 Groups C and D Class II Div. 2 Groups A,B,C,D Class III Groups E,F,G

For model D600S\*\*S, followed by P followed by \*UxAZ\* see additional installation requirements on drawing EB-1005077

Allowable process fluid temperature range for integrally mounted booster amplifier is -20°C ≤ T<sub>max</sub> ≤ +60°C.

Power 3/4"-14 NPT Conduit Seal Required within 18" of enclosure. To be sealed after wiring (customer supplied)

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground

Copper wire 20-14 AWG

Explosion-Proof housing

85-250 VAC N/L2 [L/L1] 50-60 HZ

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

IS Cable

Intrinsically Safe Terminals GREEN WHITE BROWN

VIOLET YELLOW ORANGE BLUE GRAY RED

CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded. Install per National Electric Code Article 504.

Micro Motion mass flowmeter system connection for intrinsically safe operation

Model: D600

Electronics: 1700/2700 Sensor: D600

EB-1005118 Rev. B

## 2.3.5 1700/2700 with remote core processor and DT sensor

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MODEL 1700/2700 REMOTE MOUNT WITH  
REMOTE CORE PROCESSOR AND  
SENSOR WITH JBOX

Installation Instructions  
Type UL-D-IS

---

REMOTE MOUNT MODEL 1700/2700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

For proper installation including I/O, power, gland and hazardous area location, refer to appropriate 1700/2700 output option UL-D-IS installation instructions

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Co (μF)	A, B N/A	1.21
	C	2.06
La (μH)	A, B N/A	252
	C	151
	D	607

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

**INSTALLATION NOTES:**

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc < = Vmax	
Isc < = Imax	
(Voc x Isc) / 4 < = Pmax	
Ca > = Ccable + C1 + C2 + ... + Cin	
La > = Lcable + L1 + L2 + ... + Lin	

\*The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.  
\*The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

---

4-WIRE I, S, AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
VMAX	17.3 Vdc
Imax	484 mA
Pmax	2.1W
Ci	2200pF
Li	30μH

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

---

Hazardous Area  
Class I Div. 1 Groups C,D  
Class II Div. 2 Groups A,B,C,D

DT Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

DT Sensor wires must be connected to IS Cable using customer supplied terminal block and Junction Box.

Models:  
DT65, DT100, DT150  
Supplied as intrinsically safe.

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Micro Motion mass flowmeter system connection for intrinsically safe operation.
Electronics: 1700/2700

EB-3600677 Rev. C  
SHT 1 OF 1

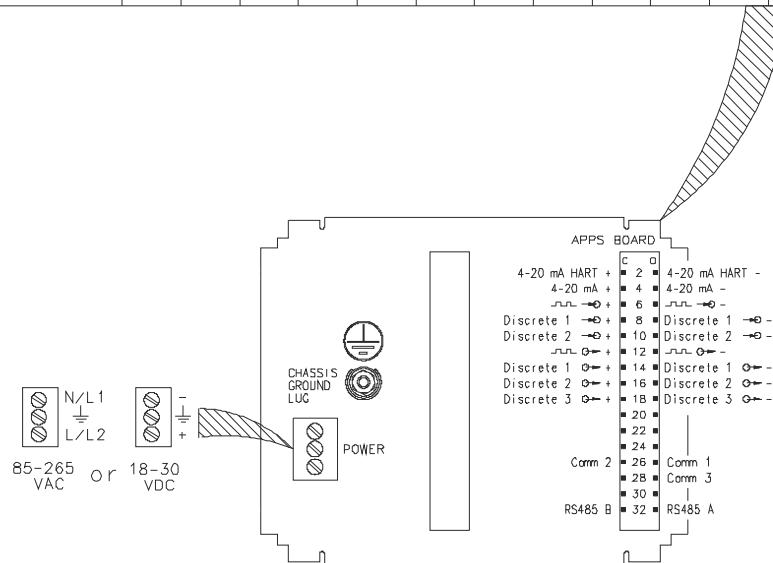
# 3 3300 transmitters

## Nonincendive parameters

Hazardous Area  
Class I Div. 2 Groups A,B,C,D

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>0</sub>			L <sub>0</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals c2 & o2	29 V	25 mA	25 nF	251 nF	78.3 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & o4	29 V	25 mA	25 nF	251 nF	78.3 nF	1 mH	6 mH	12 mH				
Discrete 1 Terminals c6 & o6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 2 Terminals c8 & o8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 3 Terminals c10 & o10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 4 Terminals c12 & o12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 5 Terminals c14 & o14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 6 Terminals c16 & o16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 7 Terminals c18 & o18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & o32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



EB-3300491 Rev. C



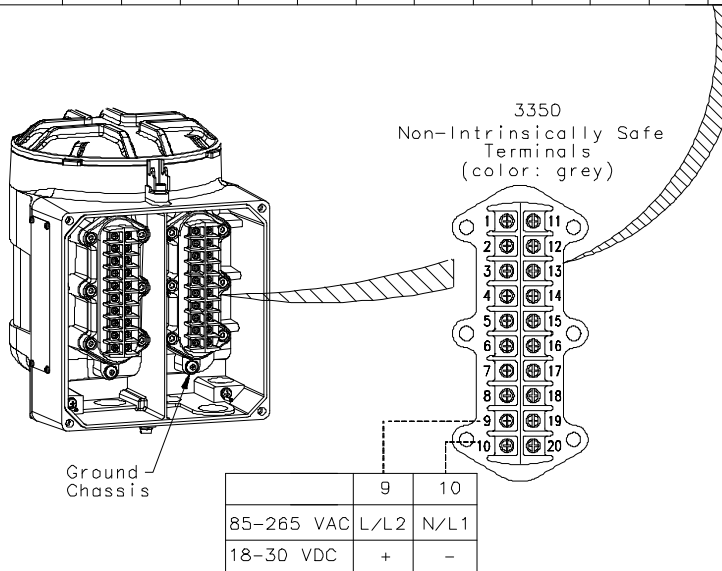
# 4 3350 transmitters

## Nonincendive parameters

Hazardous Area  
Class I Div. 2 Groups A,B,C,D  
Class II Groups F,C

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>0</sub>			L <sub>0</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals 1 & 2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals 3 & 4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Discrete 1 Terminals 5 & 6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 2 Terminals 5 & 7	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals 5 & 8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 1 Terminals 19 & 20	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals 18 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals 17 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals 16 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals 11 & 12	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



EB-3300817 Rev. B

## 5 3500 transmitters

### 5.1 3500 core processor installations

#### List of drawings

Installation	Drawing
3500 with core processor and CMF, F, or T sensors	EB-3300529, Revision D
3500 with core processor and CMF300A sensor	EB-3002933, Revision F
3500 with core processor and CMF400 sensor with booster amplifier	EB-3005807, Revision C
3500 with core processor and D600 sensor	EB-1005073, Revision B
3500 with core processor and D or DL sensors	EB-3300553, Revision D
3500 with core processor and DT sensor	EB-3300554, Revision C

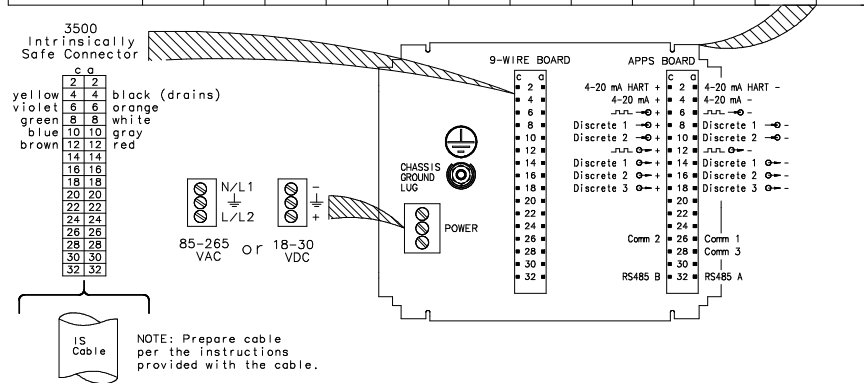


### 5.1.1 3500 with core processor and CMF, F, or T sensors

This drawing does not apply to the CMF300A sensor or to the CMF400 sensor with booster amplifier.

Division 2 nonincendive Parameters

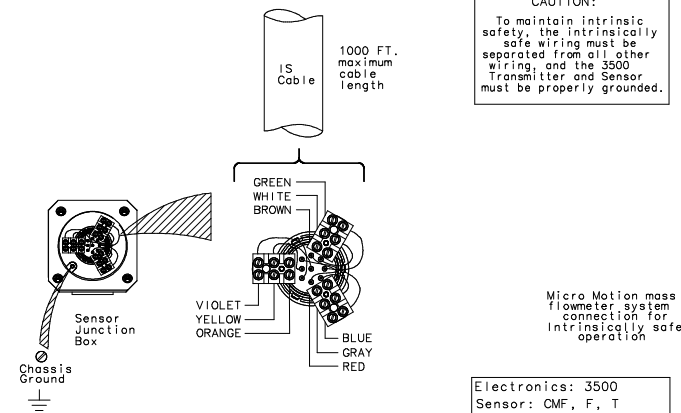
INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>o</sub>			L <sub>o</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Discrete 1 Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 2 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 1 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



Hazardous Area  
Class I Division 2 Groups A, B, C, D

Hazardous Area  
Class I Division 1 Groups C, D  
Class I Division 2 Groups A, B, C, D  
Class II Groups E, F, G

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.



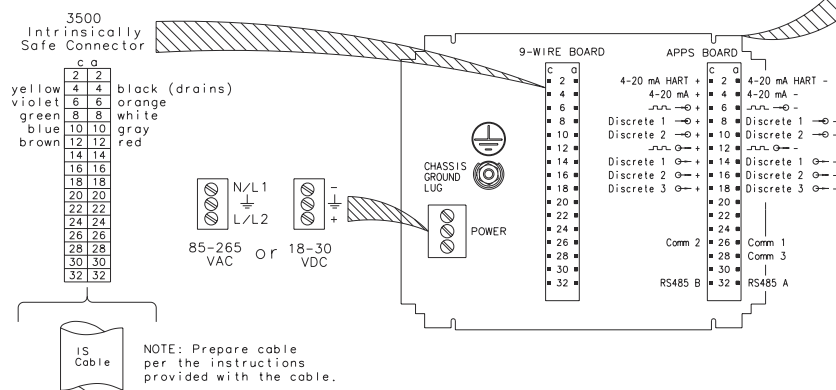
Models: CMF010, CMF025, CMF050,  
CMF100, CMF200, CMF300,  
F025, F050, F100, F200,  
T075, T100, T150  
Supplied as intrinsically safe.

EB-3300529 Rev. D

## 5.1.2 3500 with core processor and CMF300A sensor

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>a</sub>			L <sub>a</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



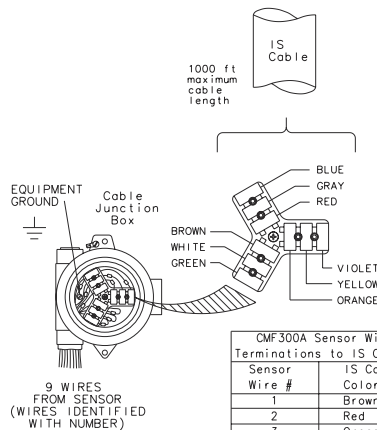
Hazardous Area  
Class 1 Div. 2 Groups A,B,C,D

Hazardous Area  
Class 1 Div. 1 Groups C,D  
Class 1 Div. 2 Groups A,B,C,D

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 329M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.



CAUTION:  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.

CMF300A Sensor Wire	Terminations to IS Cable
Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

Micro Motion mass flowmeter system connection for intrinsically safe operation

Electronics: 3500  
Sensor: CMF300A

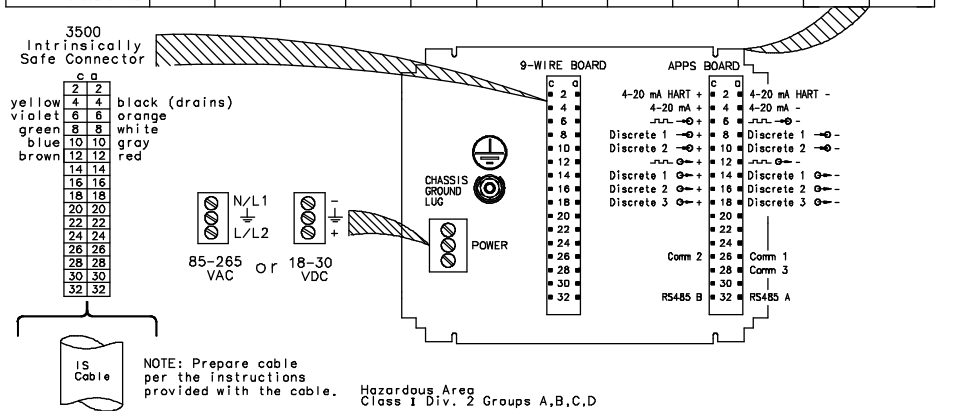
Model: CMF300A  
Supplied as intrinsically safe.

EB-3002933 Rev. F

### 5.1.3 3500 with core processor and CMF400 sensor with booster amplifier

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>a</sub>			L <sub>a</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



Hazardous Area  
Class I Div. 2 Groups A,B,C,D

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

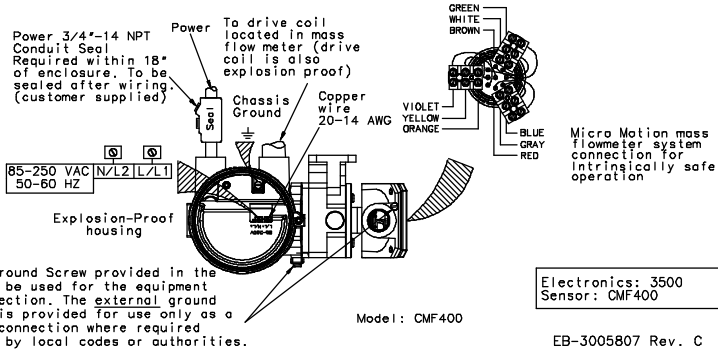
1000 ft  
maximum  
cable  
length

For model CMF400M\*\*\*N, followed by P followed by \*U\*AZ\* see additional installation requirements on drawing EB-3005811

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.

Intrinsically Safe Terminals  
Install per National Electric Code Article 504.

Allowable process fluid temperature range for integrally mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{\text{fluid}} \leq +60^{\circ}\text{C}$ .



## 5.1.4 3500 with core processor and D600 sensor

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Remote Flow Transmitter  
model 3500 with  
Sensor D600

Installation Instructions  
Type UL-D-IS

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Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>g</sub>			L <sub>g</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Discrete 1 Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 2 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 1 Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H

NOTE: Prepare cable per the instructions provided with the cable.

Hazardous Area Class I Div. 2 Groups A, B, C, D

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Hazardous Area Class I Div. 1 Groups C, D  
Class I Div. 2 Groups A, B, C, D  
Class II Groups E, F, G

1000 ft maximum cable length

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.

For model DS600S\*\*\*S, followed by P followed by \*U\*A\*Z\* see additional installation requirements on drawing EB-1005077

Install per National Electric Code Article 504.

Consult factory for use of spare orange, red and brown (RTD and P.O.) wires 1(800)522-6277

Micro Motion mass flowmeter system connection for intrinsically safe operation

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Electronics: 3500  
Sensor: D600

Model: D600

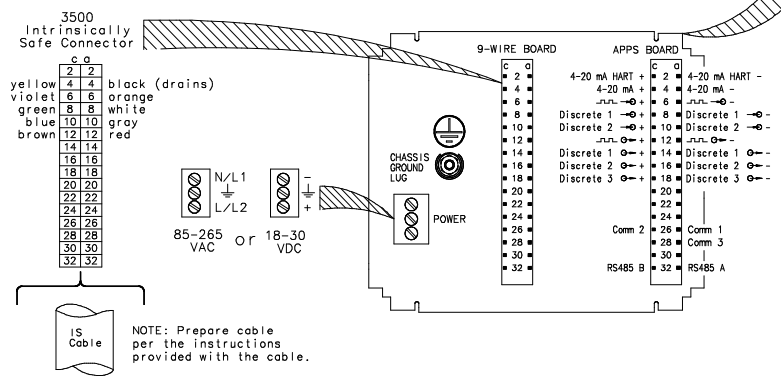
EB-1005073 Rev. B

## 5.1.5 3500 with core processor and D or DL sensors

This drawing does not apply to D600 or DT sensors.

Division 2 nonincendive Parameters

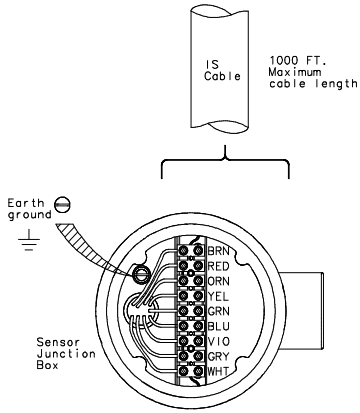
INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>0</sub>			L <sub>0</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



Hazardous Area  
Class I Division 2 Groups A,B,C,D

Hazardous Area  
Class I Division 1 Groups C,D  
Class I Division 2 Groups A,B,C,D  
Class II Groups E,F,G

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.



Micro Motion mass flowmeter system connection for intrinsically safe operation

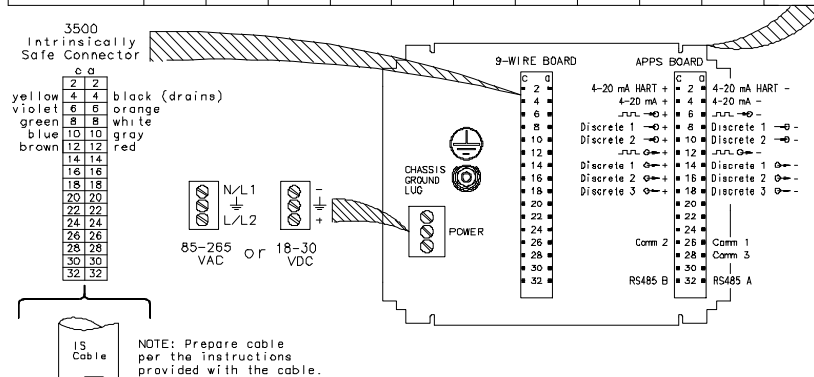
Electronics: 3500  
Sensor: D, DL

Models: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL50, DL65, DL100, DL200  
Supplied as intrinsically safe. EB-330053 Rev. D

## 5.1.6 3500 with core processor and DT sensor

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>a</sub>			L <sub>a</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals c2 & a2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals c4 & a4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Discrete 1 Terminals c6 & a6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 2 Terminals c8 & a8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 3 Terminals c10 & a10	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
RS485 A/B Terminals c12 & a12	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals c14 & a14	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals c16 & a16	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals c18 & a18	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals c32 & a32	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



NOTE: Prepare cable per the instructions provided with the cable.

Hazardous Area  
Class 1 Division 2 Groups A,B,C,D

Hazardous Area  
Class 1 Div. 1 Groups C,D  
Class 1 Div. 2 Groups A,B,C,D

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3500 Transmitter and Sensor must be properly grounded.

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

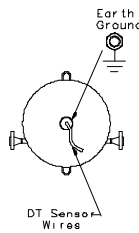
Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

Micro Motion mass flowmeter system connection for intrinsically safe operation

Electronics. 3500  
Sensor: DT

DT Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White



Models: DT65, DT100, DT150  
Supplied as intrinsically safe.

EB-3300554 Rev. C

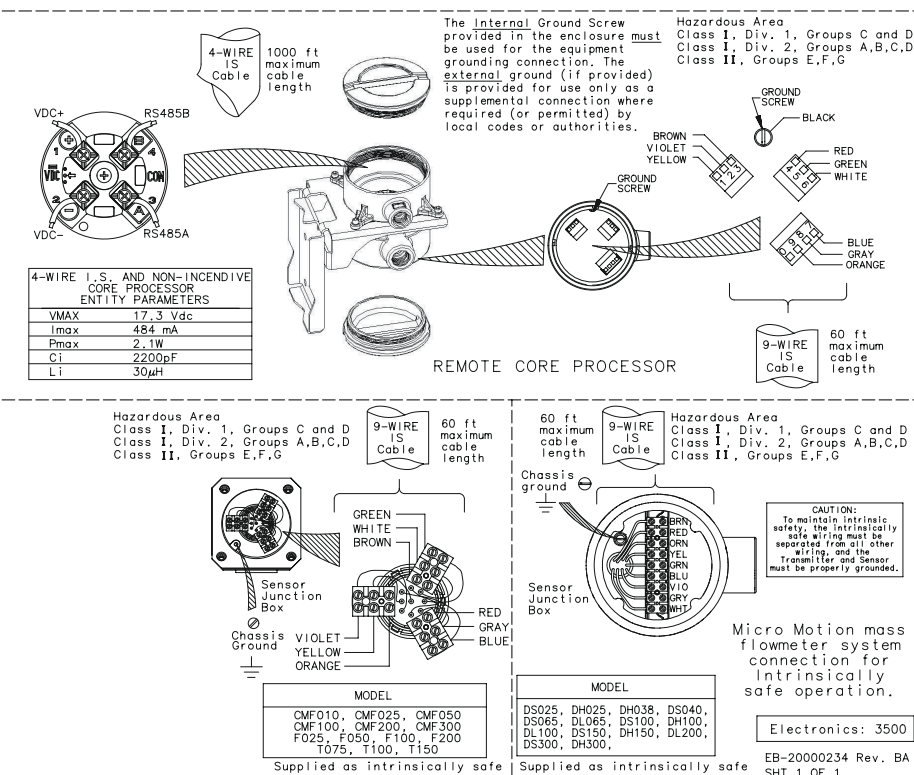
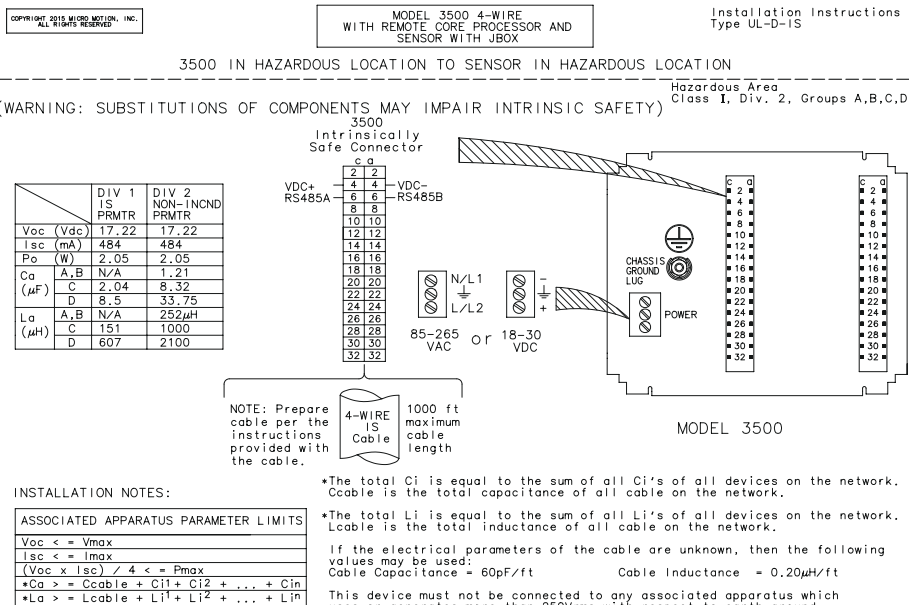
## 5.2 3500 remote core processor installations

### List of drawings

Installation	Drawing
3500 with remote core processor and CMF, D, DL, F, or T sensors	EB-20000234, Revision BA
3500 with remote core processor and CMF300A sensor	EB-20000237, Revision C
3500 with remote core processor and CMF400 sensor with booster amplifier	EB-20000228, Revision B
3500 with remote core processor and D600 sensor	EB-20000231, Revision B
3500 with remote core processor and DT sensor	EB-20000240, Revision B

## 5.2.1 3500 with remote core processor and CMF, D, DL, F, or T sensors

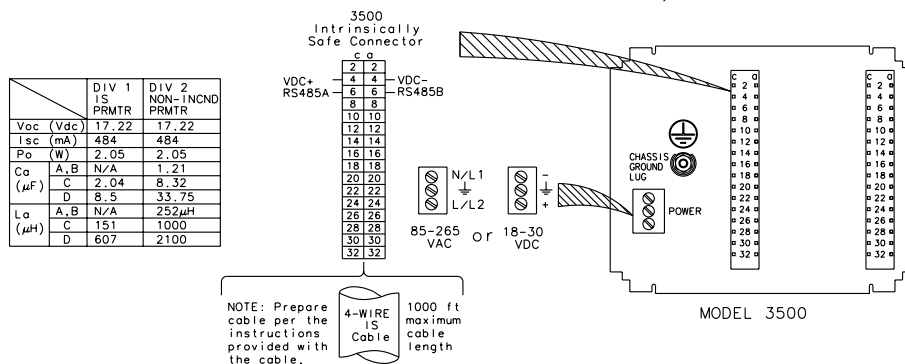
This drawing does not apply to the D600, DT, CMF300A, or CMF400 with booster amplifier sensors.





## 5.2.2 3500 with remote core processor and CMF300A sensor

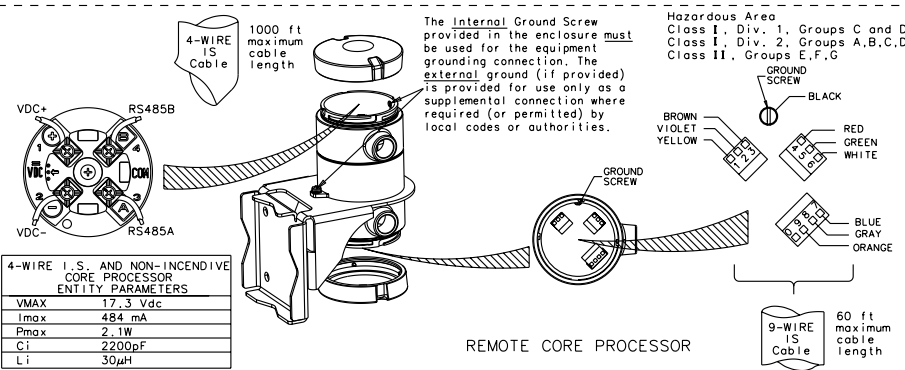
3500 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY) Hazardous Area Class I, Div. 2, Groups A,B,C,D



**INSTALLATION NOTES:**

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc <=	Vmax
Isc <=	Imax
(Voc x Isc) / 4 <=	Pmax
Ca >=	Ccable + C1 + C2 + ... + Cin
La >=	Lcable + L1 + L2 + ... + Lin

- The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.
  - The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.
- If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft
- This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.



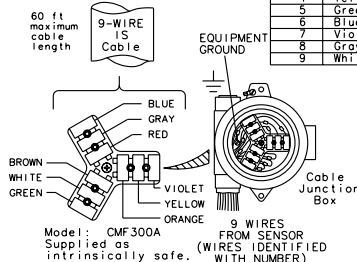
Hazardous Area  
Class I, Div. 1, Groups C,D  
Class I, Div. 2, Groups A,B,C,D  
Class II, Groups E,F,G

Sensor Wire #	IS Cable Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497N-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.



CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

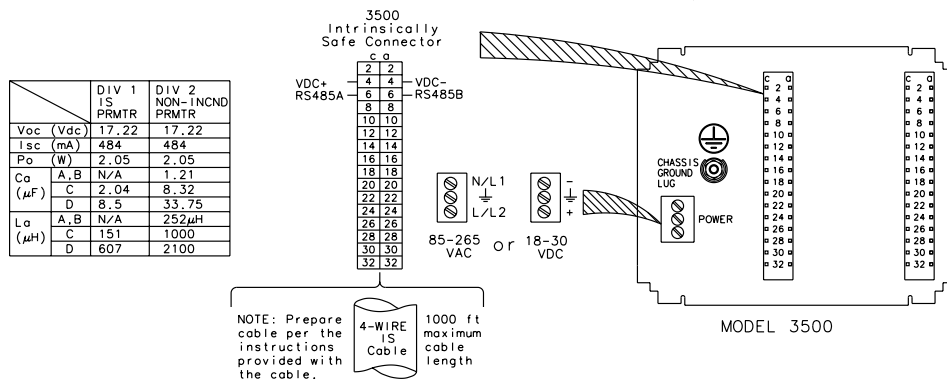
Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics: 3500  
Sensor: CMF300A

EB-20000237 Rev. C  
SHT 1 OF 1

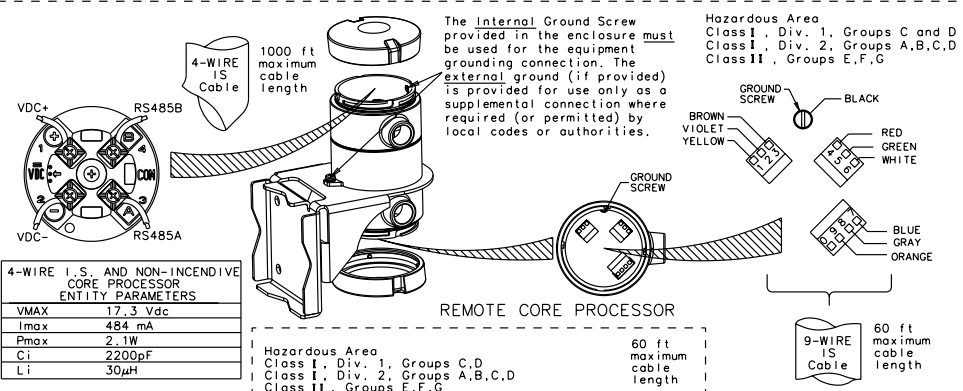
## 5.2.3 3500 with remote core processor and CMF400 sensor with booster amplifier

3500 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY) Hazardous Area Class I, Div. 2, Groups A,B,C,D



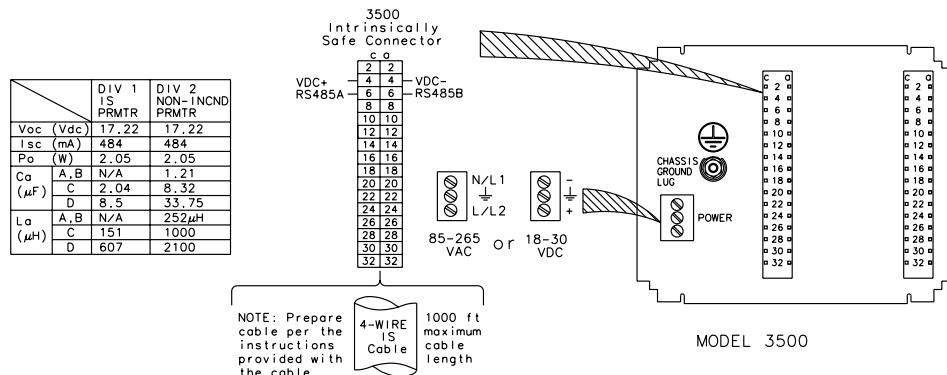
INSTALLATION NOTES:

ASSOCIATED APPARATUS PARAMETER LIMITS	
Vac <=	Vmax
Isc <=	Imax
(Vac x Isc) / 4 <=	Pmax
Ccable >=	Ccable + Ci1 + Ci2 + ... + Cin
Lcable >=	Lcable + Li1 + Li2 + ... + Lin



## 5.2.4 3500 with remote core processor and D600 sensor

3500 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY) Class I, Div. 2, Groups A,B,C,D



INSTALLATION NOTES:

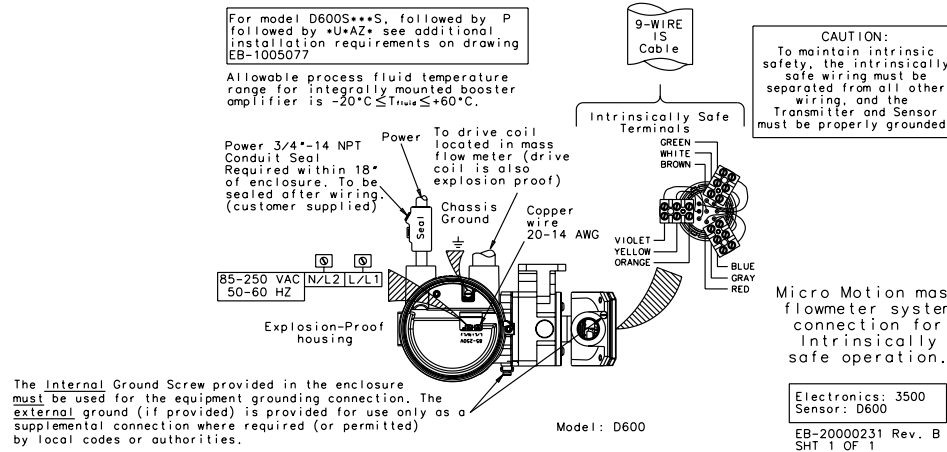
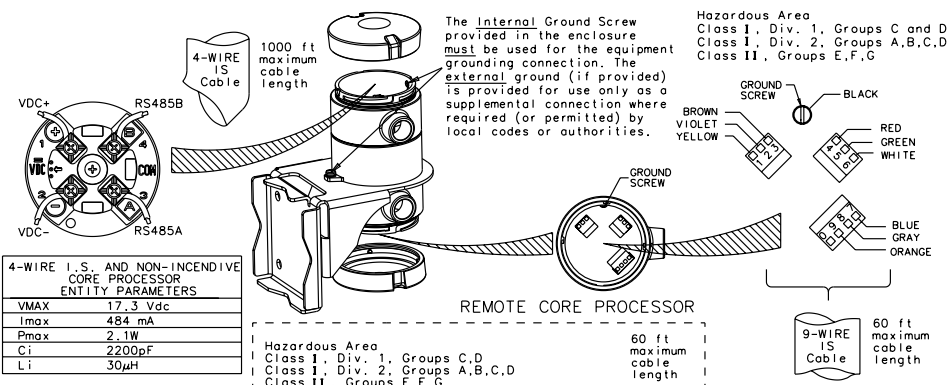
ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc < =	Vmax
Isc < =	Imax
(Voc x Isc) / 4 < =	Pmax
*Ca > =	Ccable + C1 + C2 + ... + Cin
*La > =	Lcable + L1 + L2 + ... + Lin

\*The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.

\*The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.

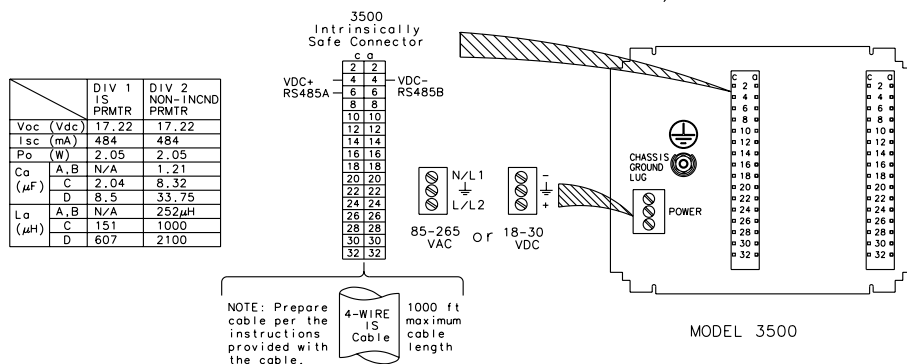
If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft Cable Inductance = 0.20µH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.



## 5.2.5 3500 with remote core processor and DT sensor

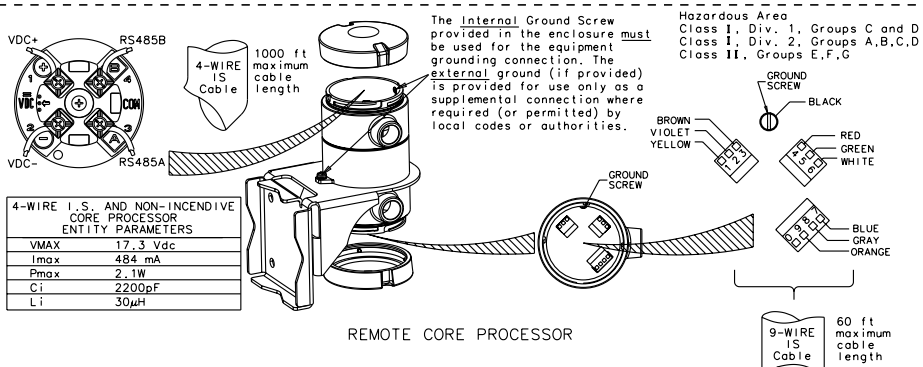
3500 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY) Hazardous Area Class I, Div. 2, Groups A,B,C,D



**INSTALLATION NOTES:**

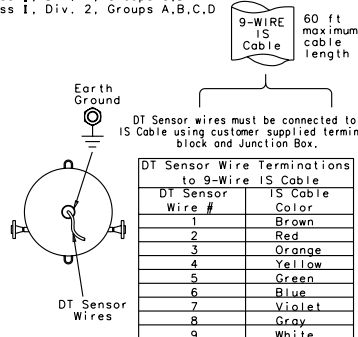
ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc <= Vmax	
Isc <= Imax	
$(Voc \times Isc) / 4 <= Pmax$	
$Ca >= Ccable + Ci^1 + Ci^2 + \dots + Cin$	
$La >= Lcable + Li^1 + Li^2 + \dots + Lin$	

- \*The total Ci is equal to the sum of all Ci's of all devices on the network. Ccable is the total capacitance of all cable on the network.
  - \*The total Li is equal to the sum of all Li's of all devices on the network. Lcable is the total inductance of all cable on the network.
- If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20µH/ft
- This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.



**REMOTE CORE PROCESSOR**

Hazardous Area Class I, Div. 1, Groups C,D  
Class I, Div. 2, Groups A,B,C,D



Models: DT65, DT100, DT150  
Supplied as intrinsically safe.

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

Micro Motion mass flowmeter system connection for intrinsically safe operation.  
Electronics: 3500  
Sensor: DT

EB-20000240 Rev. B  
SHT 1 OF 1



## 6 3700 transmitters

### 6.1 3700 core processor installations

#### List of drawings

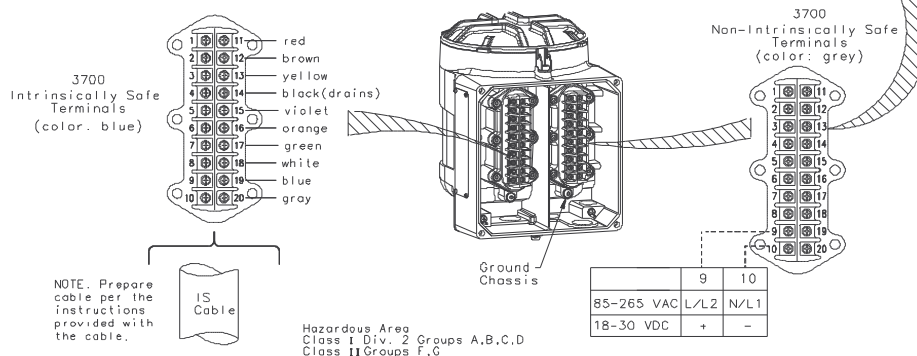
Installation	Drawing
3700 with core processor and CMF, F, or T sensors	EB-3300564, Revision D
3700 with core processor and D or DL sensors	EB-3300572, Revision D
3700 with core processor and D600 sensor	EB-1005074, Revision B
3700 with core processor and DT sensor	EB-3300574, Revision C

## 6.1.1 3700 with core processor and CMF, F, or T sensors

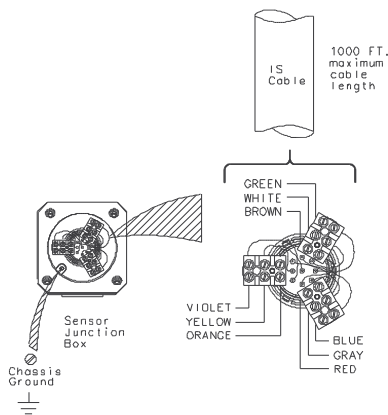
This drawing does not apply to the CMF300A sensor or to the CMF400 sensor with booster amplifier.

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>a</sub>			L <sub>a</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A, B	C	D	A, B	C	D				
4-20 mA HART Terminals 1 & 2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals 3 & 4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals 5 & 6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals 5 & 7	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals 5 & 8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals 19 & 20	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals 18 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals 17 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals 16 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals 11 & 12	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



Hazardous Area  
Class I Division 1 Groups C,D  
Class I Division 2 Groups A,B,C,D  
Class II Groups E,F,G



Electronics: 3700  
Sensor: CMF, F, T

Models: CMF010, CMF025, CMF050,  
CMF100, CMF200, CMF300,  
F025, F050, F100, F200,  
T075, T100, T150  
Supplied as intrinsically safe.

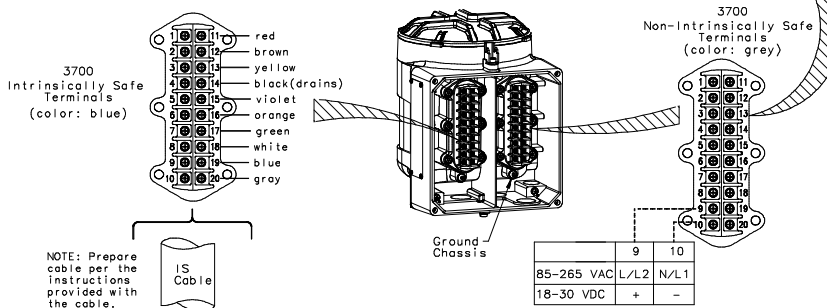
EB-3300564 Rev. D

## 6.1.2 3700 with core processor and D or DL sensors

This drawing does not apply to D600 or DT sensors.

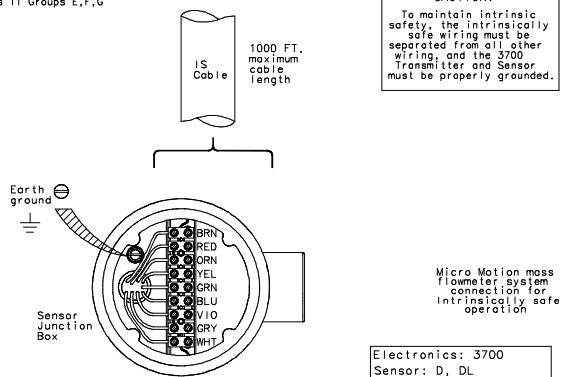
Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>0</sub>			L <sub>0</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals 1 & 2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals 3 & 4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals 5 & 6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals 5 & 7	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals 5 & 8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals 19 & 20	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals 18 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals 17 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals 16 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals 11 & 12	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



Hazardous Area  
Class I Div. 2 Groups A,B,C,D  
Class II Groups F,G

Hazardous Area  
Class I Division 1 Groups C,D  
Class I Division 2 Groups A,B,C,D  
Class II Groups E,F,G



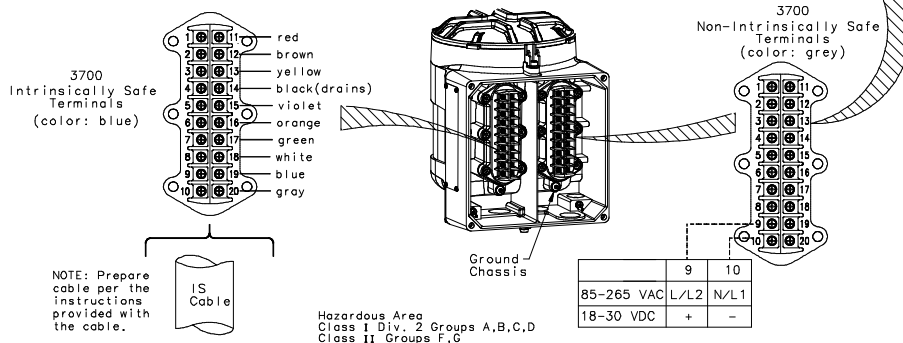
Models: D6, D12, D25, D38, D40, D65, D100, D150, D300, DL50, DL65, DL100, DL200  
Supplied as intrinsically safe. EB-3300572 Rev. D



### 6.1.3 3700 with core processor and D600 sensor

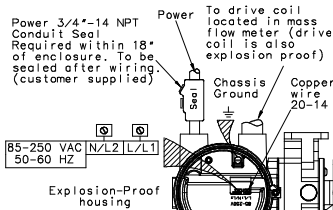
Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>a</sub>			L <sub>a</sub>			V <sub>max</sub>	I <sub>max</sub>	C <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals 1 & 2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals 3 & 4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Terminals 5 & 6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals 5 & 7	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals 5 & 8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Terminals 19 & 20	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals 18 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals 17 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals 16 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals 11 & 12	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



For model DS600S\*\*\*S, followed by P followed by \*UWAZZ see additional installation requirements on drawing EB-1005077

Allowable process fluid temperature range for integrally mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{\text{fluid}} \leq +60^{\circ}\text{C}$ .



The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

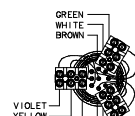
Model: D600

1000 ft maximum cable length

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3700 Transmitter and Sensor must be properly grounded.

Intrinsically Safe Terminals

Install per National Electric Code Article 504.



Consult factory for use of spare orange, red and brown (RTD and P.C.) wires (1800)522-6277

Micro Motion mass flowmeter system connection for intrinsically safe operation

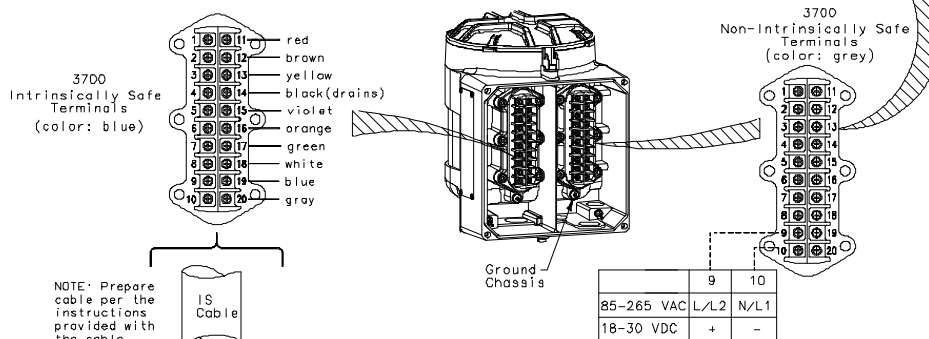
Electronics: 3700  
Sensor: D600

EB-1005074 Rev. B

## 6.1.4 3700 with core processor and DT sensor

Division 2 nonincendive Parameters

INPUT / OUTPUT Terminal numbers	V <sub>oc</sub>	I <sub>sc</sub>	C <sub>d</sub>			L <sub>d</sub>			V <sub>max</sub>	I <sub>max</sub>	D <sub>i</sub>	L <sub>i</sub>
			A,B	C	D	A,B	C	D				
4-20 mA HART Terminals 1 & 2	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
4-20 mA Terminals 3 & 4	29 V	25 mA	25 nF	251 nF	783 nF	1 mH	6 mH	12 mH				
Intrinsically Safe Terminals 5 & 6	5 V	6 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	1.5 mA	0 F	0 H
Discrete 1 Terminals 5 & 7	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Discrete 2 Terminals 5 & 8	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	30 V	0.6 mA	0 F	0 H
Intrinsically Safe Terminals 19 & 20	24 V	16 mA	0.12 μF	0.93 μF	3.35 μF	100 mH	500 mH	1 H	30 V	500 mA	0 F	0 H
Discrete 1 Terminals 18 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 2 Terminals 17 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
Discrete 3 Terminals 16 & 20	24 V	7.4 mA	0.11 μF	0.92 μF	3.34 μF	500 mH	1 H	1 H	30 V	500 mA	0.01 μF	0 H
RS485 A/B Terminals 11 & 12	5 V	1 mA	11 μF	174 μF	3000 μF	1 H	1 H	1 H	5 V	250 mA	0 F	0 H



NOTE: Prepare cable per the instructions provided with the cable.

Hazardous Area  
Class I Div. 2 Groups A,B,C,D  
Class II Groups F,C

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the 3700 Transmitter and Sensor must be properly grounded.

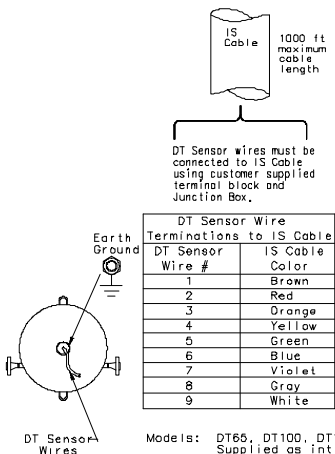
**CAUTION:** PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

Micro Motion mass flowmeter system connection for intrinsically safe operation

Electronics: 3700  
Sensor: DT



DT Sensor Wires  
Models: DT65, DT100, DT150  
Supplied as intrinsically safe

EB-3300574 Rev. C

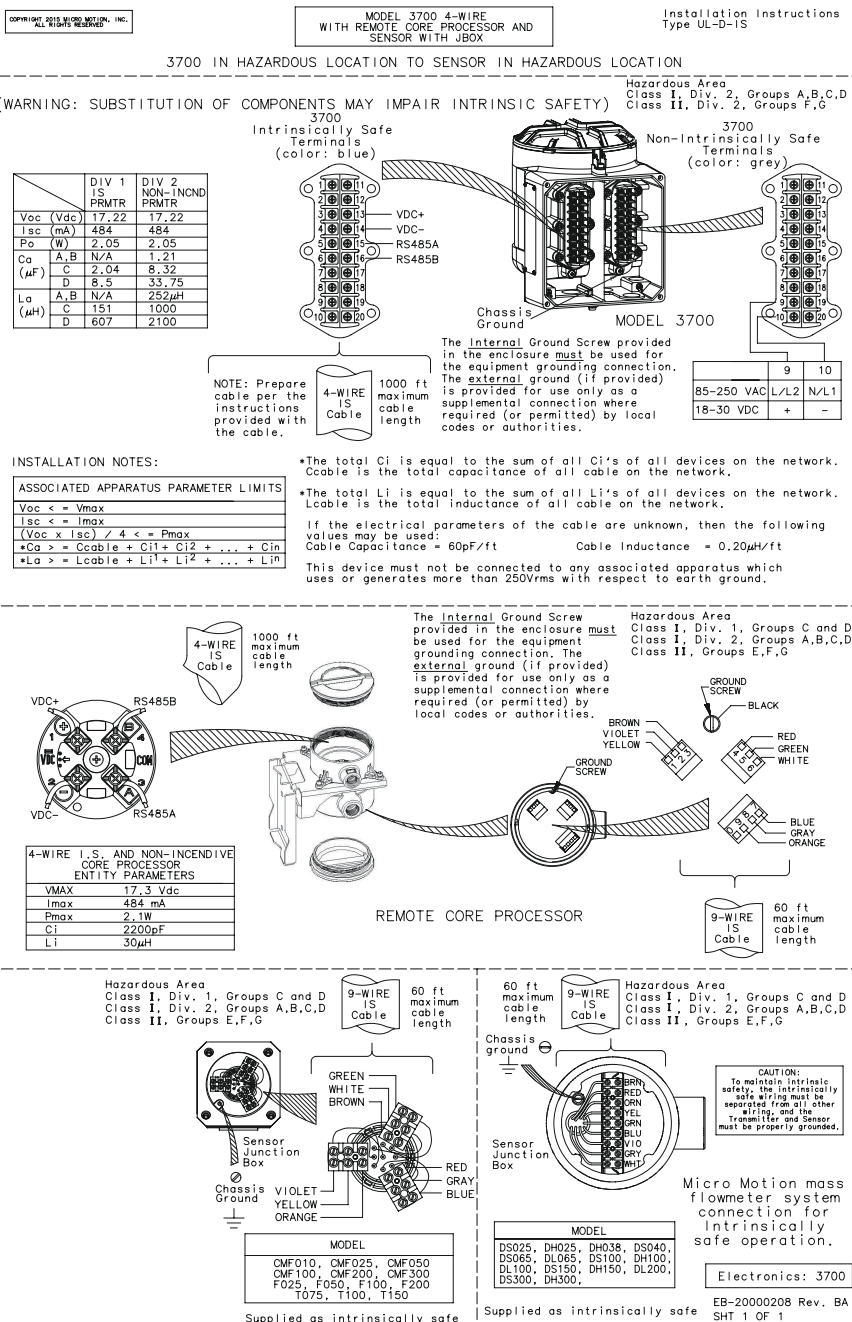
## 6.2 3700 remote core processor installations

### List of drawings

Installation	Drawing
3700 with remote core processor and CMF, D, DL, F, H, or T sensors	EB-20000208, Revision BA
3700 with remote core processor and CMF300A sensor	EB-20000211, Revision C
3700 with remote core processor and CMF400 sensor with booster amplifier	EB-20000202, Revision B
3700 with remote core processor and D600 sensor	EB-20000205, Revision B
3700 with remote core processor and DT sensor	EB-20000214, Revision B

## 6.2.1 3700 with remote core processor and CMF, D, DL, F, H, or T sensors

This drawing does not apply to the D600, DT, CMF300A, or CMF400 with booster amplifier sensors.



## 6.2.2 3700 with remote core processor and CMF300A sensor

3700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Ca (μF)	A, B	N/A
	C	2.04
	D	8.5
		33.75
La (μH)	A, B	N/A
	C	151
	D	1000
		2100

NOTE: Prepare cable per the instructions provided with the cable.

3700 Intrinsically Safe Terminals (color: blue)

3700 Non-Intrinsically Safe Terminals (color: grey)

Chassis Ground MODEL 3700

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

	9	10
85-265 VAC	L/L2	N/L1
18-30 VDC	+	-

4-WIRE IS Cable 1000 ft maximum cable length

**INSTALLATION NOTES:**

•The total Ci is equal to the sum of all Ci's of all devices on the network. Cable Ci is the total capacitance of all cable on the network.

•The total Li is equal to the sum of all Li's of all devices on the network. Cable Li is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc < =	Vmax
Isc < =	Imax
(Voc x Isc) / 4 < =	Pmax
Ca > =	Ccable + Ci1 + Ci2 + ... + Cin
La > =	Lcable + Li1 + Li2 + ... + Lin

4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
VMAX	17.3 Vdc
IMAX	484 mA
Pmax	2.1W
Ci	2200pF
Li	30μH

4-WIRE IS Cable 1000 ft maximum cable length

9-WIRE IS Cable 60 ft maximum cable length

REMOTE CORE PROCESSOR

The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Hazardous Area Class I, Div. 1, Groups C and D Class I, Div. 2, Groups A,B,C,D Class II, Groups E,F,G

BLACK  
RED  
GREEN  
WHITE  
BLUE  
GRAY  
ORANGE

Hazardous Area Class I, Div. 1, Groups C,D Class I, Div. 2, Groups A,B,C,D Class II, Groups E,F,G

60 ft maximum cable length

9-WIRE IS Cable

EQUIPMENT GROUND

Model: CMF300A Supplied as intrinsically safe.

9 WIRES FROM SENSOR (WIRES IDENTIFIED WITH NUMBER)

CMF300A Sensor Wire Terminations to 9-wire IS Cable

Sensor Wire #	Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray
9	White

Cable Junction Box

CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the transmitter and sensor must be properly grounded.

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497M-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics: 3700 Sensor: CMF300A

EB-20000211 Rev. C SHT 1 OF 1

## 6.2.3 3700 with remote core processor and CMF400 sensor with booster amplifier

3700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION  
(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
V <sub>oc</sub> (Vdc)	17.22	17.22
I <sub>sc</sub> (mA)	484	484
P <sub>o</sub> (W)	2.05	2.05
C <sub>a</sub> (μF)	A, B	N/A
	C	2.04
L <sub>i</sub> (μH)	A, B	N/A
	C	151
	D	607

MODEL 3700

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

NOTE: Prepare cable per the instructions provided with the cable.

4-WIRE IS Cable  
1000 ft maximum cable length

	9	10
85-265 VAC	L/L2	N/L1
18-30 VDC	+	-

**INSTALLATION NOTES:**

ASSOCIATED APPARATUS PARAMETER LIMITS	
V <sub>oc</sub> < = V <sub>max</sub>	
I <sub>sc</sub> < = I <sub>max</sub>	
(V <sub>oc</sub> × I <sub>sc</sub> ) / 4 < = P <sub>max</sub>	
C <sub>o</sub> > = C <sub>able</sub> + C <sub>1</sub> + C <sub>2</sub> + ... + C <sub>n</sub>	
L <sub>o</sub> > = L <sub>able</sub> + L <sub>1</sub> + L <sub>2</sub> + ... + L <sub>n</sub>	

\*The total C<sub>i</sub> is equal to the sum of all C<sub>i</sub>'s of all devices on the network. Cable is the total capacitance of all cable on the network.  
\*The total L<sub>i</sub> is equal to the sum of all L<sub>i</sub>'s of all devices on the network. Cable is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft      Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

---

4-WIRE I.S. AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS	
V <sub>MAX</sub>	17.3 Vdc
I <sub>max</sub>	484 mA
P <sub>max</sub>	2.1W
C <sub>i</sub>	2200pF
L <sub>i</sub>	30μH

REMOTE CORE PROCESSOR

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

4-WIRE IS Cable  
1000 ft maximum cable length

60 ft maximum cable length

9-WIRE IS Cable

For model CMF400\*\*\*N, followed by P followed by \*U\*A\*Z\* see additional installation requirements on drawing EB-3005811

Allowable process fluid temperature range for integrally mounted booster amplifier is -40°C ≤ T<sub>max</sub> ≤ +60°C.

Power 3/4"-14 NPT Conduit Seal Required within 18" of enclosure. To be sealed after wiring. (customer supplied)

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground

Copper wire 20-14 AWG

Explosion-Proof housing

MODEL: CMF400

Micro Motion mass flowmeter system connection for intrinsically safe operation.

85-250 VAC 50-60 HZ

N/L2 L/L1

ELECTRONICS: 3700 SENSOR: CMF400	
EB-20000202 Rev. B SHT 1 OF 1	

## 6.2.4 3700 with remote core processor and D600 sensor

3700 IN HAZARDOUS LOCATION TO SENSOR IN HAZARDOUS LOCATION

(WARNING: SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY)

	DIV 1 IS PRMTR	DIV 2 NON-INCND PRMTR
Voc (Vdc)	17.22	17.22
Isc (mA)	484	484
Po (W)	2.05	2.05
Ca (μF)	A, B C	N/A 1.21 8.32
La (μH)	A, B C	N/A 252 1000
	D	607 2100

3700  
Intrinsically Safe  
Terminals  
(color: blue)

3700  
Non-Intrinsically Safe  
Terminals  
(color: grey)

MODEL 3700

Chassis  
Ground

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

9	10
85-265 VAC	L/L2 N/L1
18-30 VDC	+ -

NOTE: Prepare cable per the instructions provided with the cable.

4-WIRE IS Cable 1000 ft maximum cable length

INSTALLATION NOTES:

•The total Ci is equal to the sum of all Ci's of all devices on the network. Cable is the total capacitance of all cable on the network.

•The total Li is equal to the sum of all Li's of all devices on the network. Cable is the total inductance of all cable on the network.

If the electrical parameters of the cable are unknown, then the following values may be used:  
Cable Capacitance = 60pF/ft Cable Inductance = 0.20μH/ft

This device must not be connected to any associated apparatus which uses or generates more than 250Vrms with respect to earth ground.

ASSOCIATED APPARATUS PARAMETER LIMITS	
Voc <	Vmax
Isc <	Imax
(Voc x Isc) <	4 x Pmax
Cable >	Cable = C1 + C2 + ... + Cn
La >	La = L1 + L2 + ... + Ln

4-WIRE IS AND NON-INCENDIVE CORE PROCESSOR ENTITY PARAMETERS

VMAX	17.3 Vdc
Imax	484 mA
Pmax	2.3 W
Ci	2200pF
Li	30μH

REMOTE CORE PROCESSOR

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Hazardous Area Class I, Div. 1, Groups C and D Class II, Div. 2, Groups A, B, C, D Class II, Groups E, F, G

GROUND SCREW BLACK BROWN YELLOW RED GREEN WHITE BLUE GRAY ORANGE

9-WIRE IS Cable 60 ft maximum cable length

For model D600S\*\*\*S, followed by P followed by "A" or "Z" see additional installation requirements on drawing EB-1005077

Allowable process fluid temperature range for integrally mounted booster amplifier is -20°C ≤ T<sub>max</sub> ≤ +60°C.

Power 3/4"-14 NPT Conduit Seal Required within 18" of enclosure. To be sealed after wiring (customer supplied)

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground Copper wire 20-14 AWG

85-250 VAC 50-60 HZ N/L2 L/L1

Model: D600

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

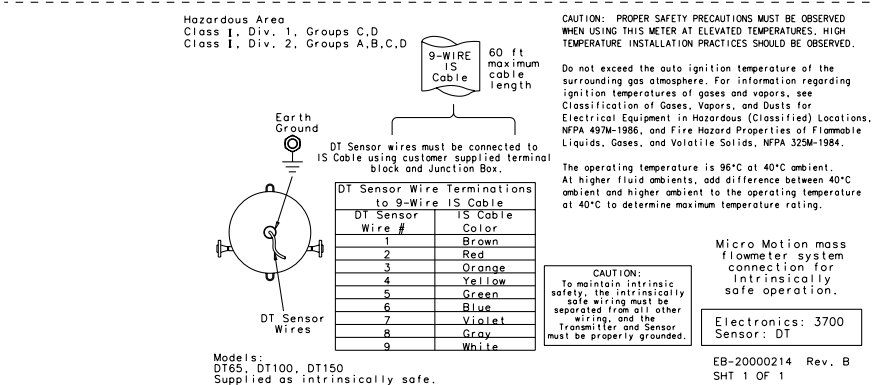
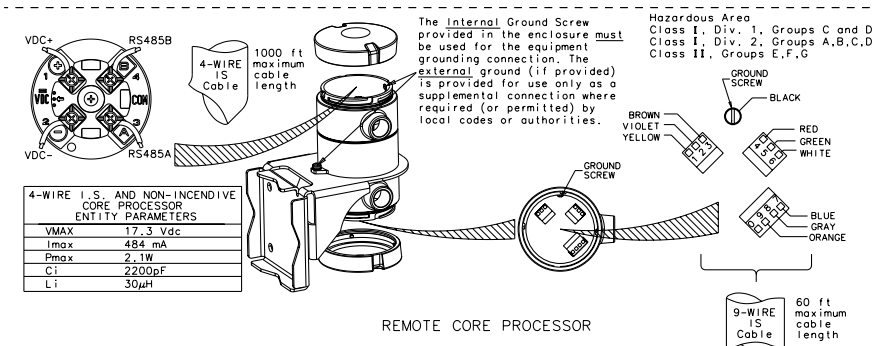
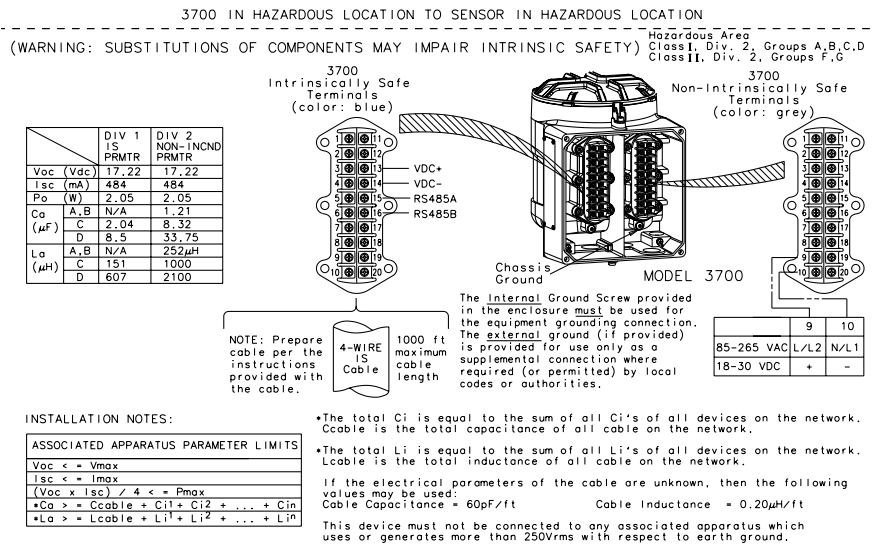
CAUTION:

To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the Transmitter and Sensor must be properly grounded.

Electronics: 3700  
Sensor: D600  
EB-20000205 Rev. B  
SHT 1 OF 1



## 6.2.5 3700 with remote core processor and DT sensor







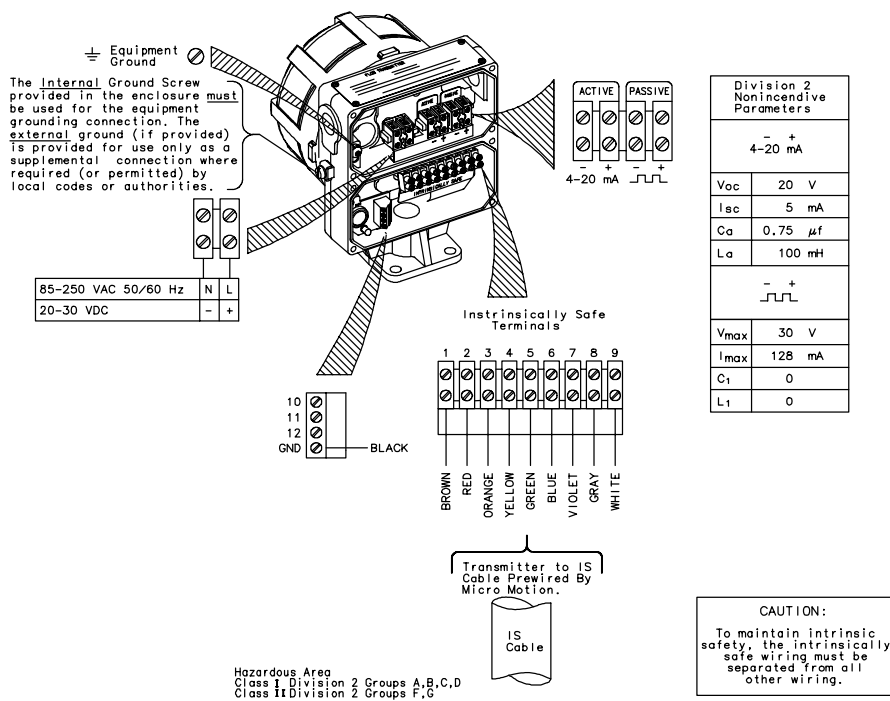
# 7 9701 transmitters

## List of drawings

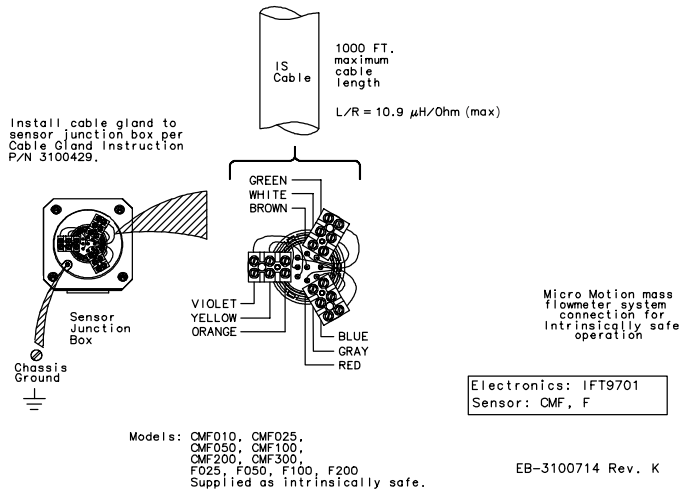
Installation	Drawing
9701 with CMF or F sensors	EB-3100714, Revision K
9701 with CMF300A sensor	EB-3003299, Revision C
9701 with CMF400 sensor with booster amplifier	EB-3005805, Revision C
9701 with D or DL sensors	EB-3100715, Revision H

## 7.1 9701 with CMF or F sensors

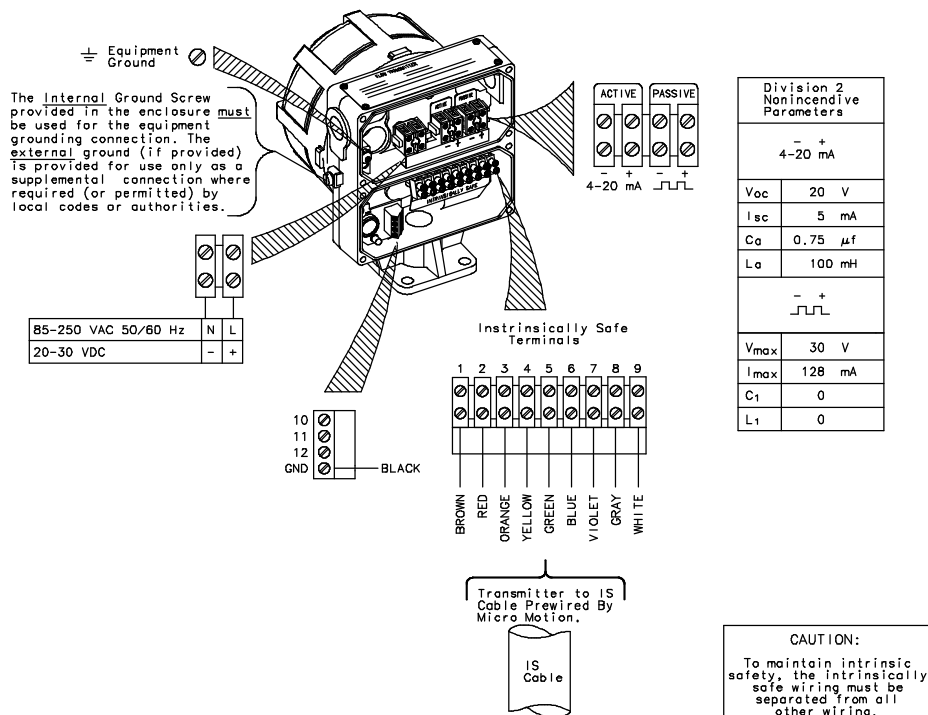
This drawing does not apply to the CMF300A sensor or to the CMF400 sensor with booster amplifier.



**Hazardous Area**  
Class I Division 1 Groups C,D  
Class I Division 2 Groups A,B,C,D  
Class II Groups E,F,G

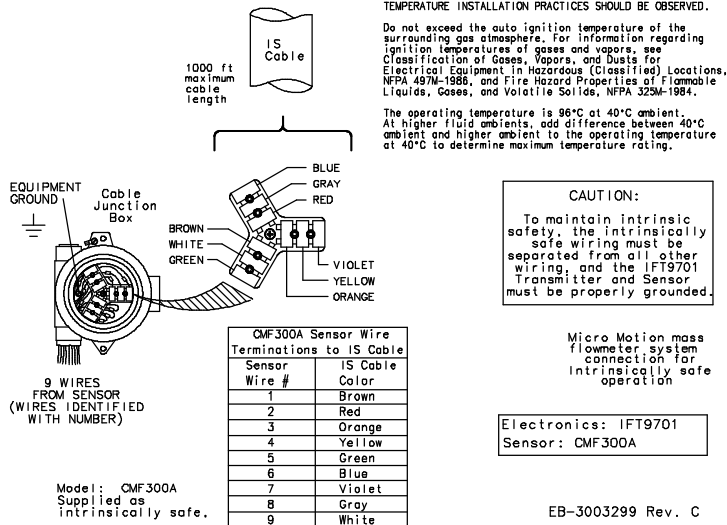


## 7.2 9701 with CMF300A sensor

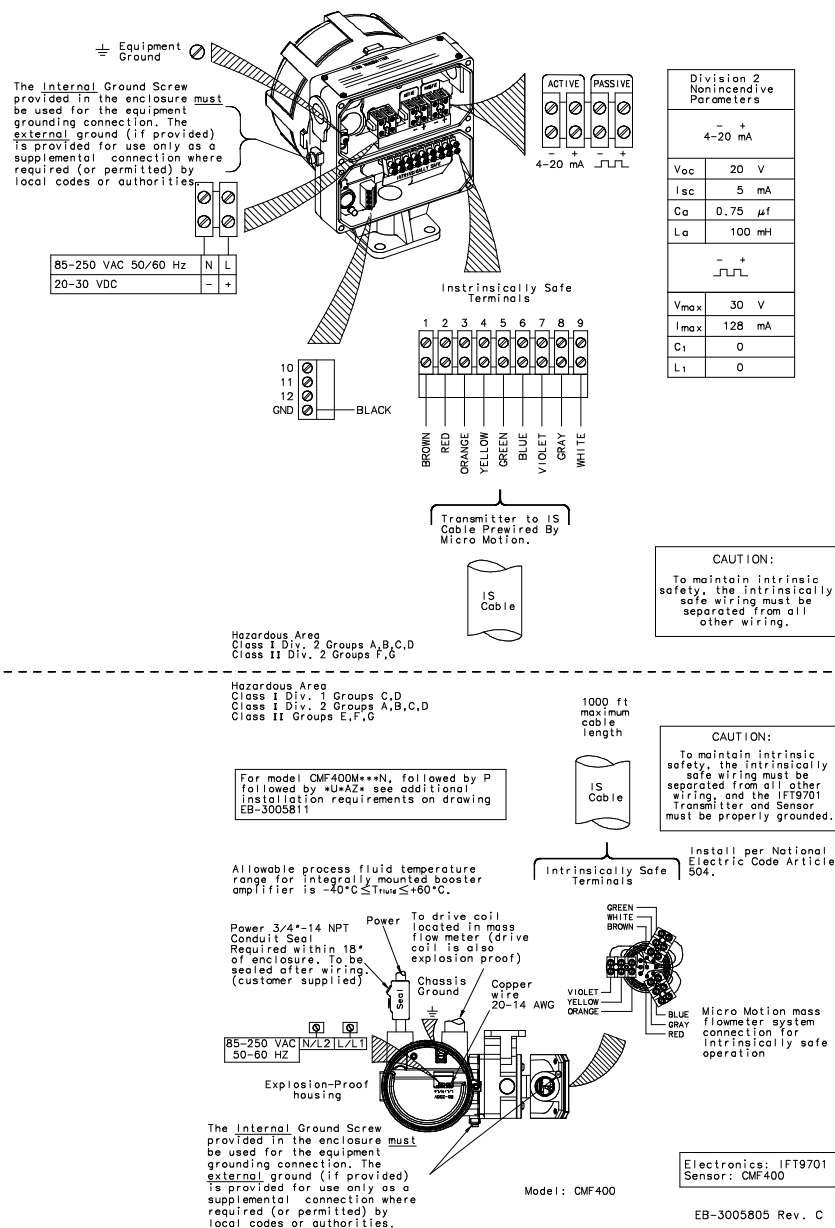


Hazardous Area  
Class I Div. 2 Groups A,B,C,D  
Class II Div. 2 Groups F,G

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D

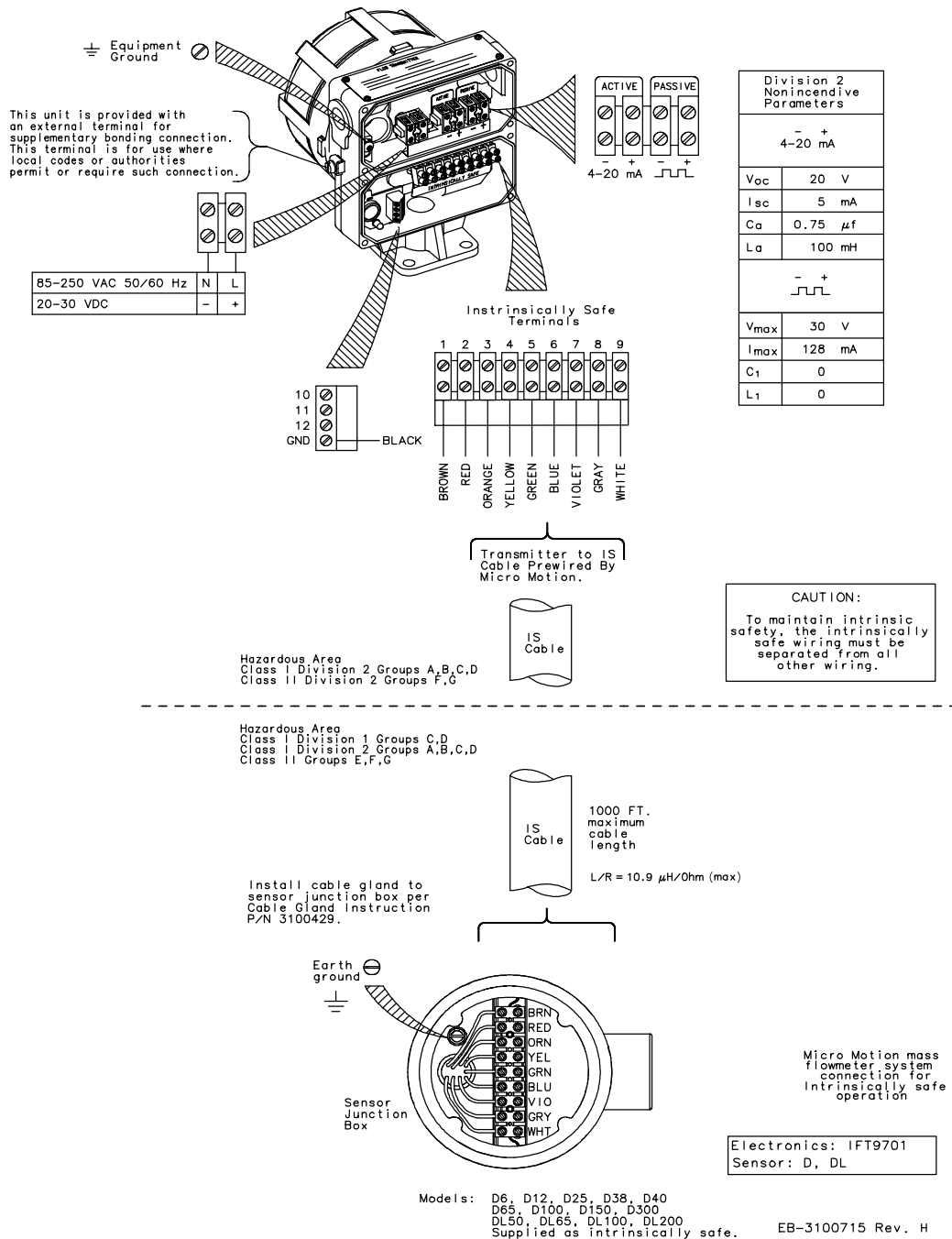


## 7.3 9701 with CMF400 sensor with booster amplifier



## 7.4 9701 with D or DL sensors

This drawing does not apply to D600 or DT sensors.





## 8 9739 transmitters

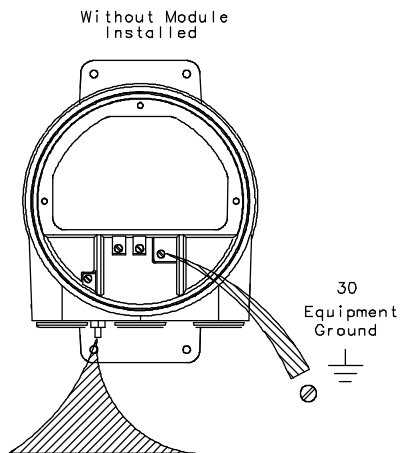
### 8.1 9739 field mount installations

#### List of drawings

Installation	Drawing
9739 field mount grounding	EB-3001547 Rev E
9739 field mount with CMF or F sensors	EB-3002205, Revision GB
9739 field mount with CMF300 sensor	EB-3002929, Revision F
9739 field mount with CMF400 sensor and a booster amplifier	EB-3005802, Revision C
9739 field mount with D or DL sensors	EB-3002206, Revision GB
9739 field mount with D600 sensor	EB-1005069, Revision B
9739 field mount with DT sensor	EB-3002208, Revision EA



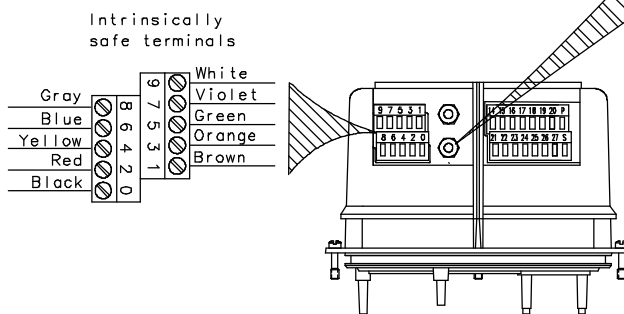
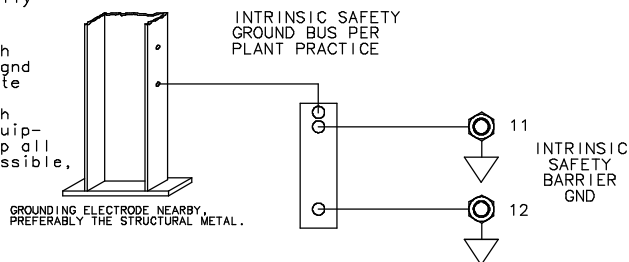
## 8.1.1 9739 field mount grounding



The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

### Requirements for intrinsically safe ground wiring:

Connect two (2) individual 14-gauge wires, one for each intrinsically safe barrier gnd stud on the RFT9739. Terminate intrinsically safe ground conductors to the same earth ground connection as the equipment ground conductor. Keep all ground leads as short as possible, < 1 ohm impedance.

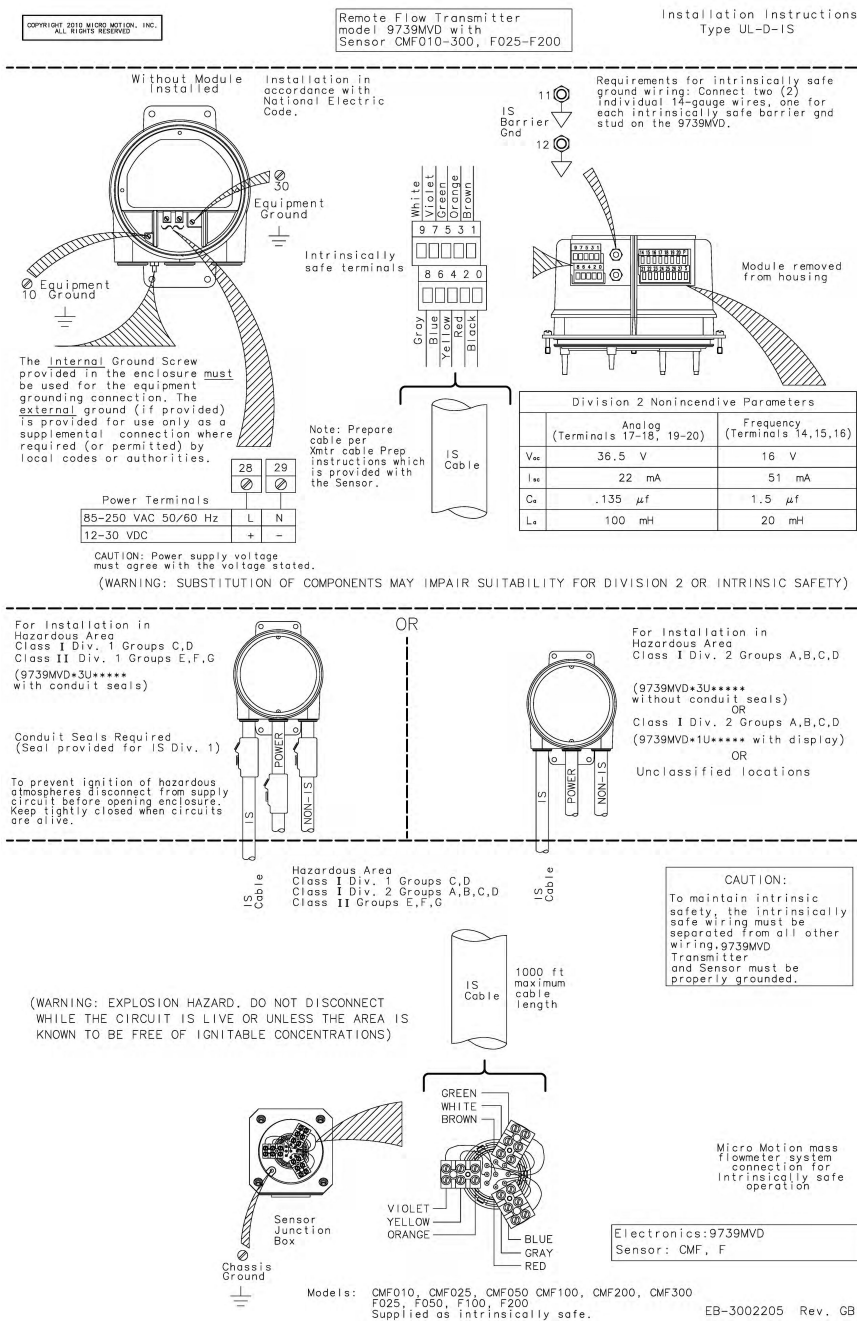


Module removed from housing

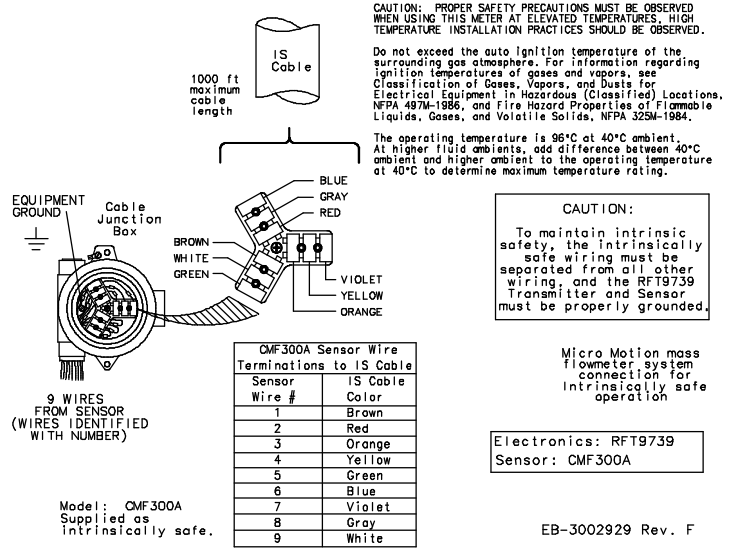
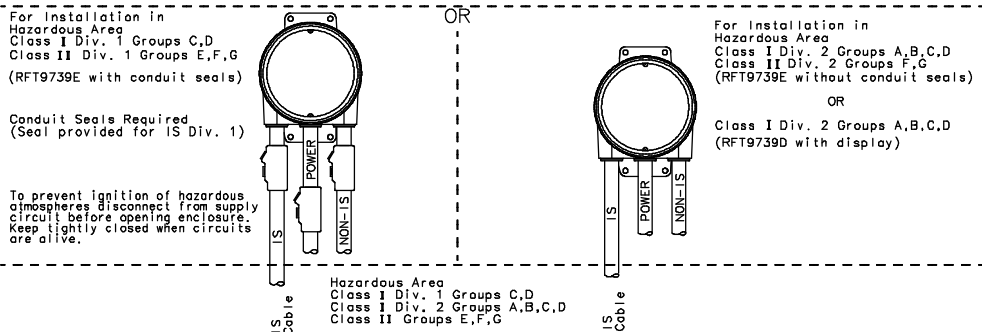
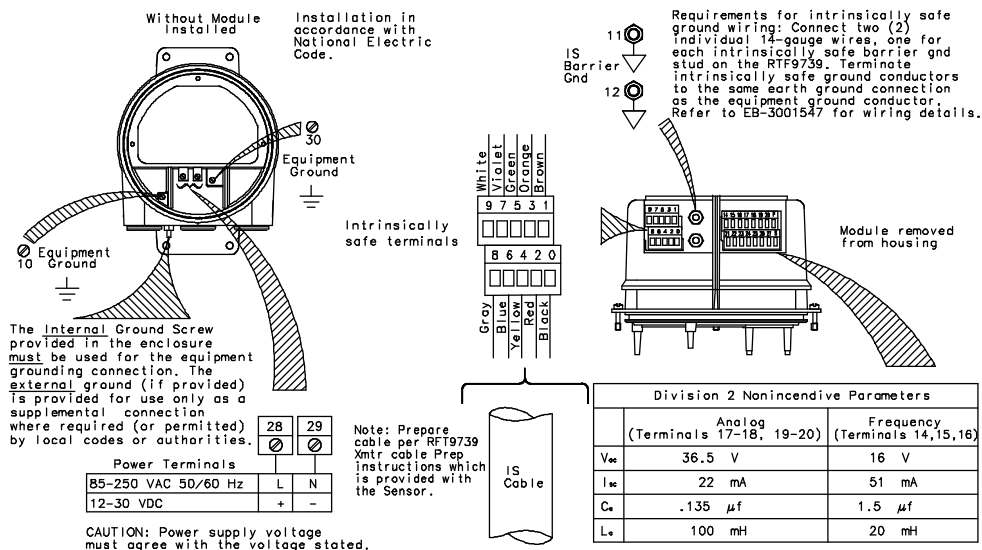
EB-3001547 Rev. E

## 8.1.2 9739 field mount with CMF or F sensors

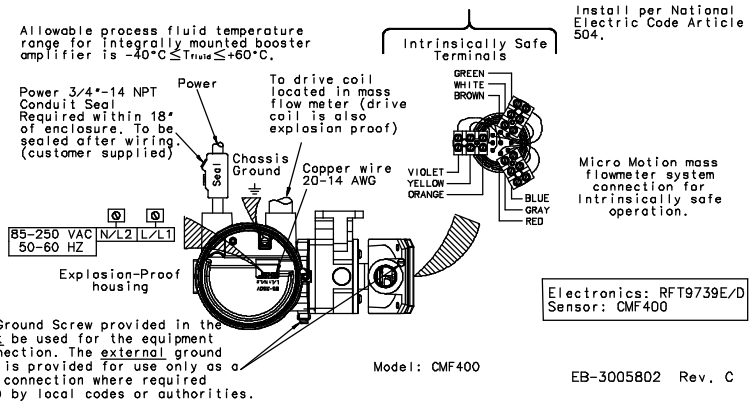
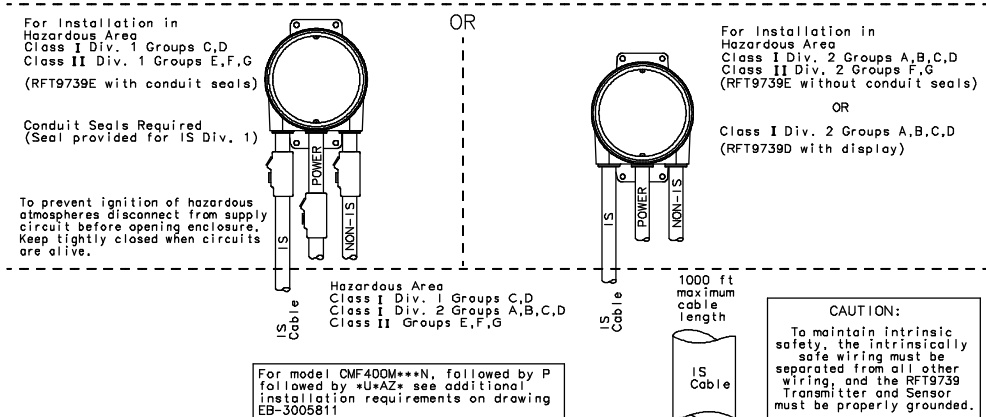
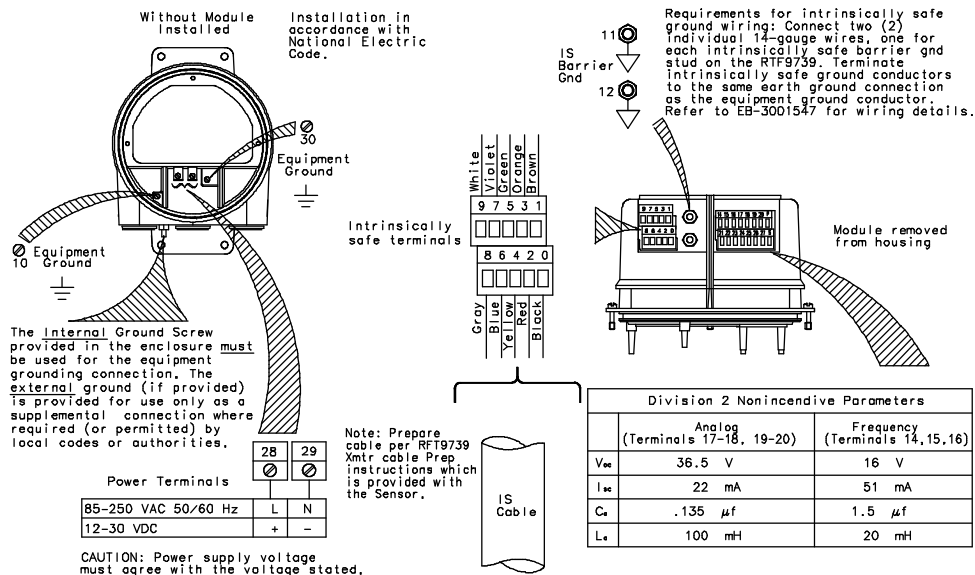
This drawing does not apply to the CMF300A sensor or to the CMF400 sensor with booster amplifier.



### 8.1.3 9739 field mount with CMF300 sensor

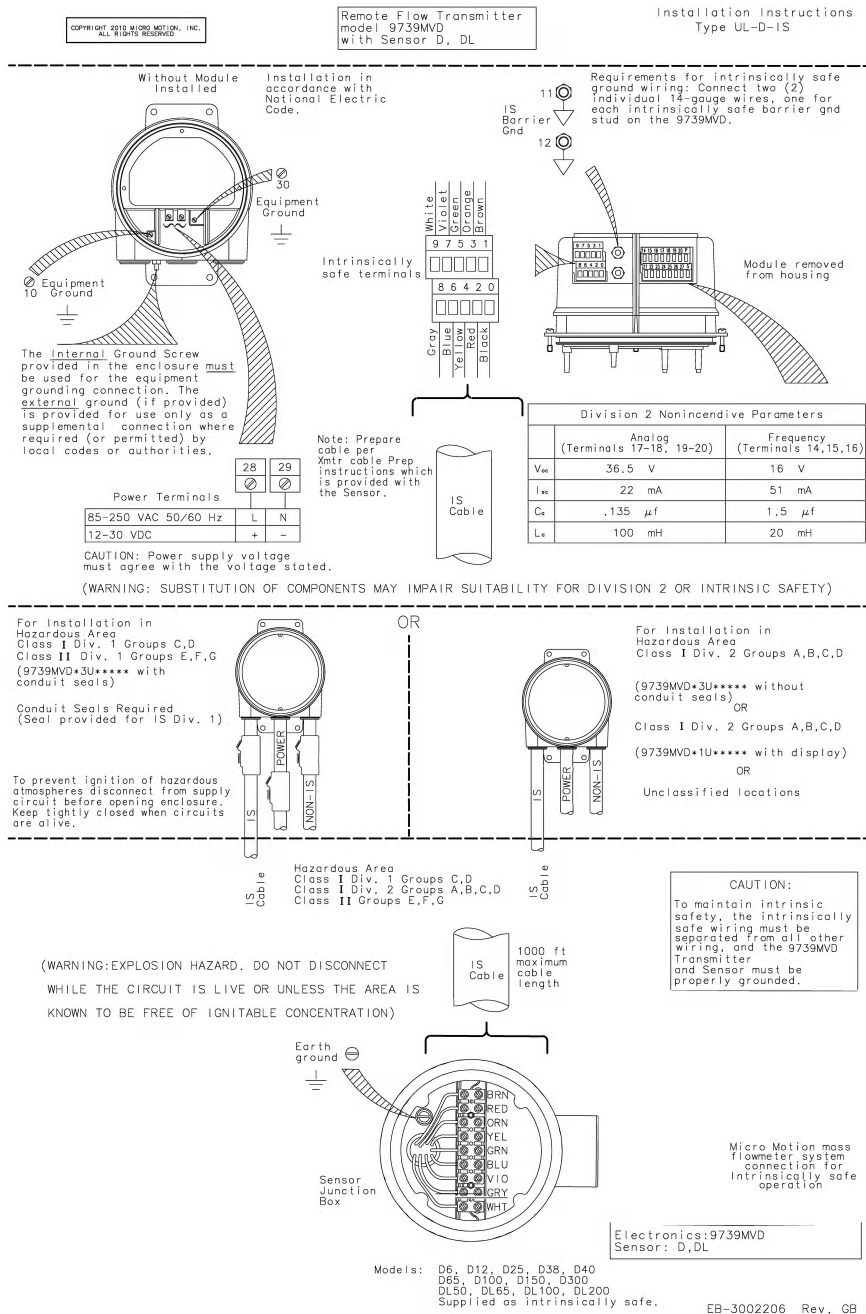


## 8.1.4 9739 field mount with CMF400 sensor and a booster amplifier



## 8.1.5 9739 field mount with D or DL sensors

This drawing does not apply to D600 or DT sensors.



## 8.1.6 9739 field mount with D600 sensor

**Without Module Installed**

Installation in accordance with National Electric Code.

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Equipment Ground

Equipment Ground

Power Terminals

85-250 VAC 50/60 Hz	L	N
12-30 VDC	+	-

CAUTION: Power supply voltage must agree with the voltage stated.

**Requirements for intrinsically safe ground wiring:** Connect two (2) individual 14-gauge wires, one for each intrinsically safe barrier gnd stud on the RFT9739. Terminate intrinsically safe ground conductors to the same earth ground connection as the equipment ground conductor. Refer to EB-3001547 for wiring details.

IS Barrier Gnd

Module removed from housing

Intrinsically safe terminals

White	9
White	7
Green	5
Orange	3
Brown	1
Gray	8
Blue	6
Yellow	4
Red	2
Black	0

Note: Prepare cable per RFT9739 Xmlr cable Prep instructions which is provided with the Sensor.

**Division 2 Nonincendive Parameters**

	Analog (Terminals 17-18, 19-20)	Frequency (Terminals 14,15,16)
V <sub>oc</sub>	36.5 V	16 V
I <sub>sc</sub>	22 mA	51 mA
C <sub>0</sub>	.135 μf	1.5 μf
L <sub>0</sub>	100 mH	20 mH

For Installation in Hazardous Area Class I Div. 1 Groups C,D Class II Div. 1 Groups E,F,G (RFT9739E with conduit seals)

Conduit Seals Required (Seal provided for IS Div. 1)

To prevent ignition of hazardous atmospheres disconnect from supply circuit before opening enclosure. Keep tightly closed when circuits are alive.

OR

For Installation in Hazardous Area Class I Div. 2 Groups A,B,C,D Class II Div. 2 Groups F,G (RFT9739E without conduit seals)

OR

Class I Div. 2 Groups A,B,C,D (RFT9739D with display)

For model DS600S\*\*\*S, followed by P followed by \*U\*A\*Z\* see additional installation requirements on drawing EB-1005077

Allowable process fluid temperature range for integrally mounted booster amplifier is -40°C ≤ T<sub>max</sub> ≤ +60°C.

Power 3/4"-14 NPT Conduit Seal Required within 18" of enclosure. To be sealed after wiring (customer supplied).

Power

To drive coil located in mass flow meter (drive coil is also explosion proof)

Chassis Ground

Copper wire 20-14 AWC

Explosion-Proof housing

85-250 VAC 50-60 HZ

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

1000 ft maximum cable length

IS Cable

Intrinsically Safe Terminals

GREEN  
WHITE  
BROWN  
VIOLET  
YELLOW  
ORANGE  
BLUE  
GRAY  
RED

Micro Motion mass flowmeter system connection for intrinsically safe operation.

Electronics: RFT9739E/D  
Sensor: D600

CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the RFT9739 Transmitter and Sensor must be properly grounded.

Install per National Electric Code Article 504.

Consult factory for use of spare orange, red and brown (RTD and P.O.) wires 1(800)522-6277

Model: D600

EB-1005069 Rev. B

## 8.1.7 9739 field mount with DT sensor

Remote Flow Transmitter  
model RFT9739 or 9739MVD  
with Sensor DT

Installation Instructions  
Type UL-D-IS

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**Without Module Installed**

The Internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Equipment Ground 10

Equipment Ground 30

Power Terminals

28	29	L	N
+	-		

85-250 VAC 50/60 Hz  
12-30 VDC

CAUTION: Power supply voltage must agree with the voltage stated.

**Installation in accordance with National Electric Code.**

Intrinsically safe terminals

Note: Prepare cable per RFT9739 Xmt'r cable Prep instructions which is provided with the Sensor.

IS Cable

Requirements for intrinsically safe ground wiring: Connect two (2) individual 14-gauge wires, one for each intrinsically safe barrier stud on the RFT9739. Terminate intrinsically safe ground conductors to the same earth ground connection as the equipment ground conductor. Refer to EB-3001547 for wiring details.

IS Barrier Gnd 11  
IS Barrier Gnd 12

Module removed from housing

Division 2 Nonincendive Parameters		
	Analog (Terminals 17-18, 19-20)	Frequency (Terminals 14,15,16)
V <sub>m</sub>	36.5 V	16 V
I <sub>w</sub>	22 mA	51 mA
C <sub>s</sub>	.135 μf	1.5 μf
L <sub>s</sub>	100 mH	20 mH

---

**For Installation in Hazardous Area Class I Div. 1 Groups C,D Class II Div. 1 Groups E,F,G (RFT9739E with conduit seals) or (9739MVD+3U\*\*\*\* with conduit seals)**

Conduit Seals Required (Seal provided for IS Div. 1)

To prevent ignition of hazardous atmospheres disconnect from supply circuit before opening enclosure. Keep tightly closed when circuits are alive.

IS Cable

POWER

NON-IS

Hazardous Area Class I Div. 1 Groups C,D Class II Div. 2 Groups A,B,C,D

**OR**

**For Installation in Hazardous Area Class I Div. 2 Groups A,B,C,D Class II Div. 2 Groups E,F,G (RFT9739E without conduit seals) or (9739MVD+3U\*\*\*\* without conduit seals)**

**OR**

**Class I Div. 2 Groups A,B,C,D (RFT9739D with display) or (9739MVD+1U\*\*\*\* with display)**

IS Cable

POWER

NON-IS

IS Cable

1000 ft maximum cable length

DT Sensor wires must be connected to IS Cable using customer supplied terminal block and Junction Box.

DT Sensor Wire	IS Cable Wire #	IS Cable Color
1	1	Brown
2	2	Red
3	3	Orange
4	4	Yellow
5	5	Green
6	6	Blue
7	7	Violet
8	8	Gray
9	9	White

Earth Ground

DT Sensor Wires

CAUTION: To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the RFT9739 or 9739MVD Transmitter and Sensor must be properly grounded.

CAUTION: PROPER SAFETY PRECAUTIONS MUST BE OBSERVED WHEN USING THIS METER AT ELEVATED TEMPERATURES. HIGH TEMPERATURE INSTALLATION PRACTICES SHOULD BE OBSERVED.

Do not exceed the auto ignition temperature of the surrounding gas atmosphere. For information regarding ignition temperatures of gases and vapors, see Classification of Gases, Vapors, and Dusts for Electrical Equipment in Hazardous (Classified) Locations, NFPA 497-1986, and Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, NFPA 325M-1984.

The operating temperature is 96°C at 40°C ambient. At higher fluid ambients, add difference between 40°C ambient and higher ambient to the operating temperature at 40°C to determine maximum temperature rating.

Micro Motion mass flowmeter system connection for intrinsically safe operation

Electronics: RFT9739 or 9739MVD  
Sensor: DT

Models: DT65, DT100, DT150  
Supplied as intrinsically safe.

EB-3002208 Rev. EA



## 8.2 9739 rack mount installations

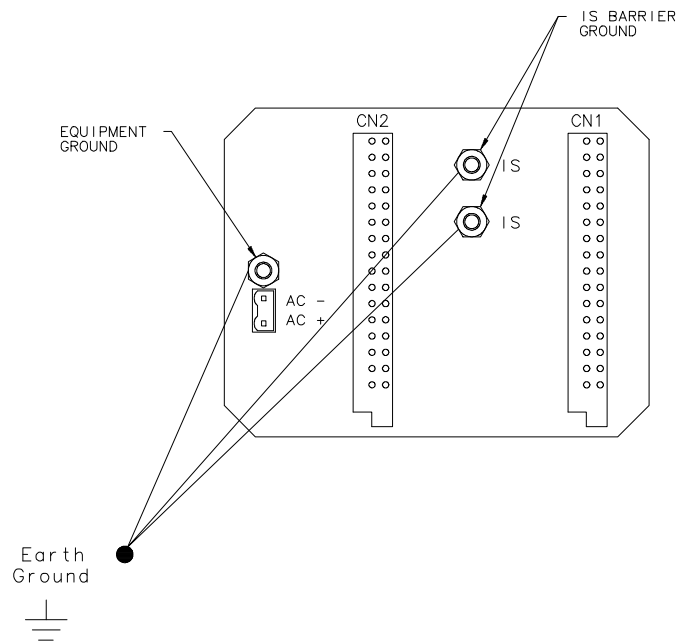
### List of drawings

Installation	Drawing
9739 rack mount grounding	EW-3002535, Revision A
9739 rack mount with CMF or F sensors	EB-3002519, Revision E
9739 rack mount with CMF300A sensor	EB-3002931, Revision E
9739 rack mount with CMF400A sensor and a booster amplifier	EB-3005803, Revision C
9739 rack mount with D or DL sensors	EB-3002520, Revision E
9739 rack mount with D600 sensor	EB-1005070, Revision B
9739 rack mount with DT sensor	EB-3005606, Revision B



## 8.2.1 9739 rack mount grounding

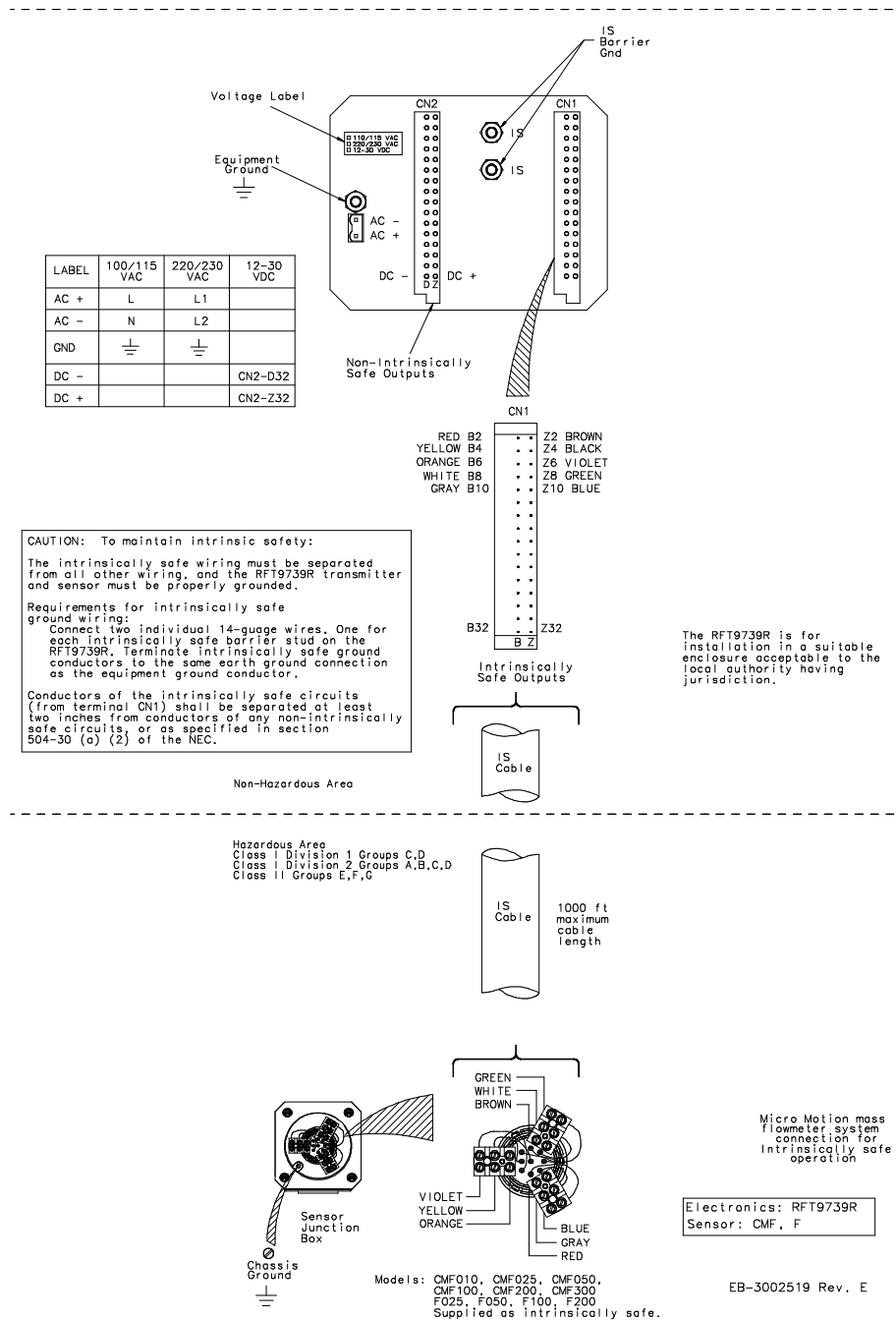
Requirements for intrinsically safe ground wiring:  
Connect two (2) individual 14-gauge wires, one for each intrinsically safe barrier and stud on the RFT9739R. Terminate intrinsically safe ground conductors to the same earth ground connection as the equipment ground conductor. Keep all ground leads as short as possible, < 1 ohm impedance.



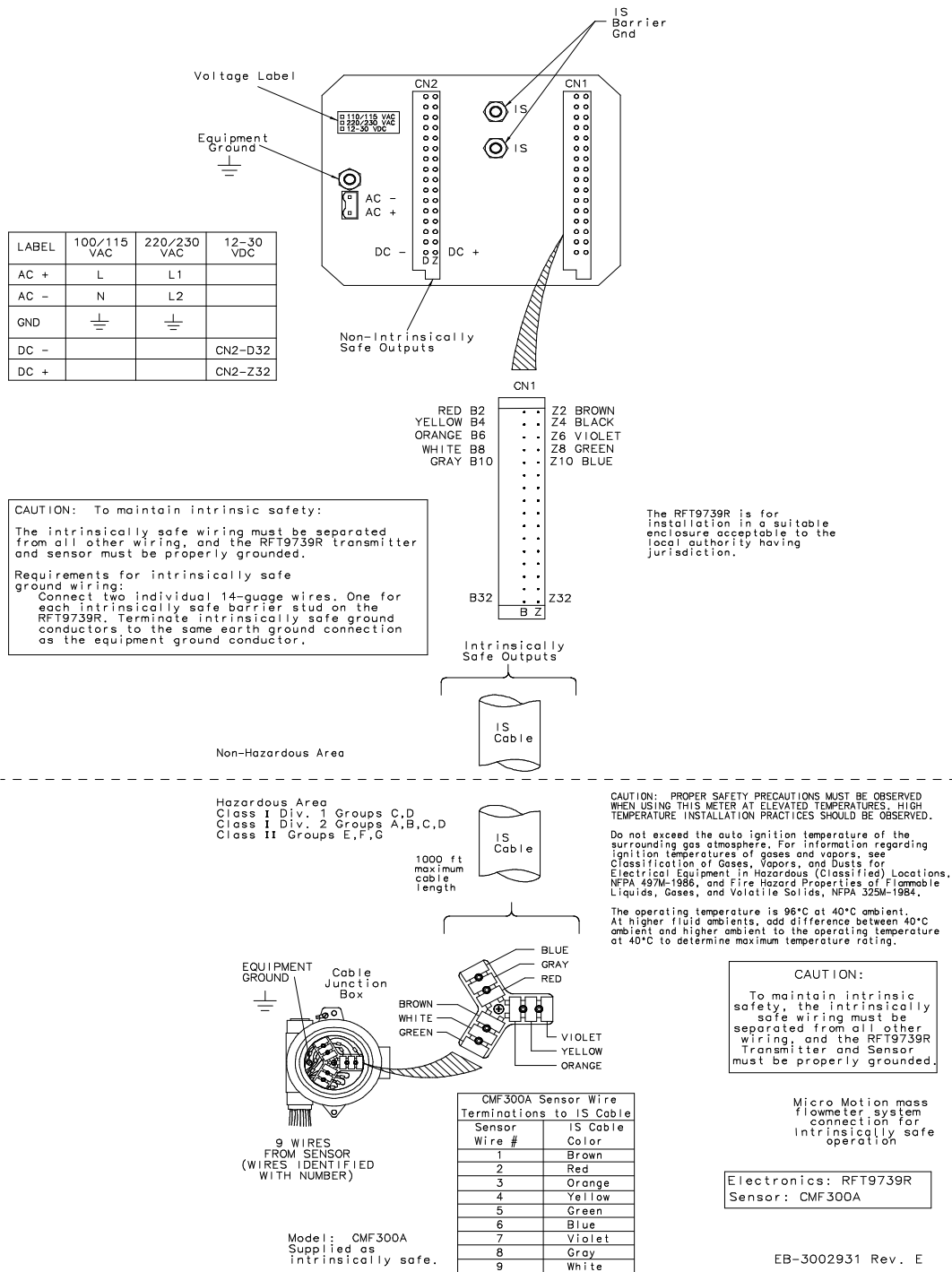
EW-3002535 Rev. A

## 8.2.2 9739 rack mount with CMF or F sensors

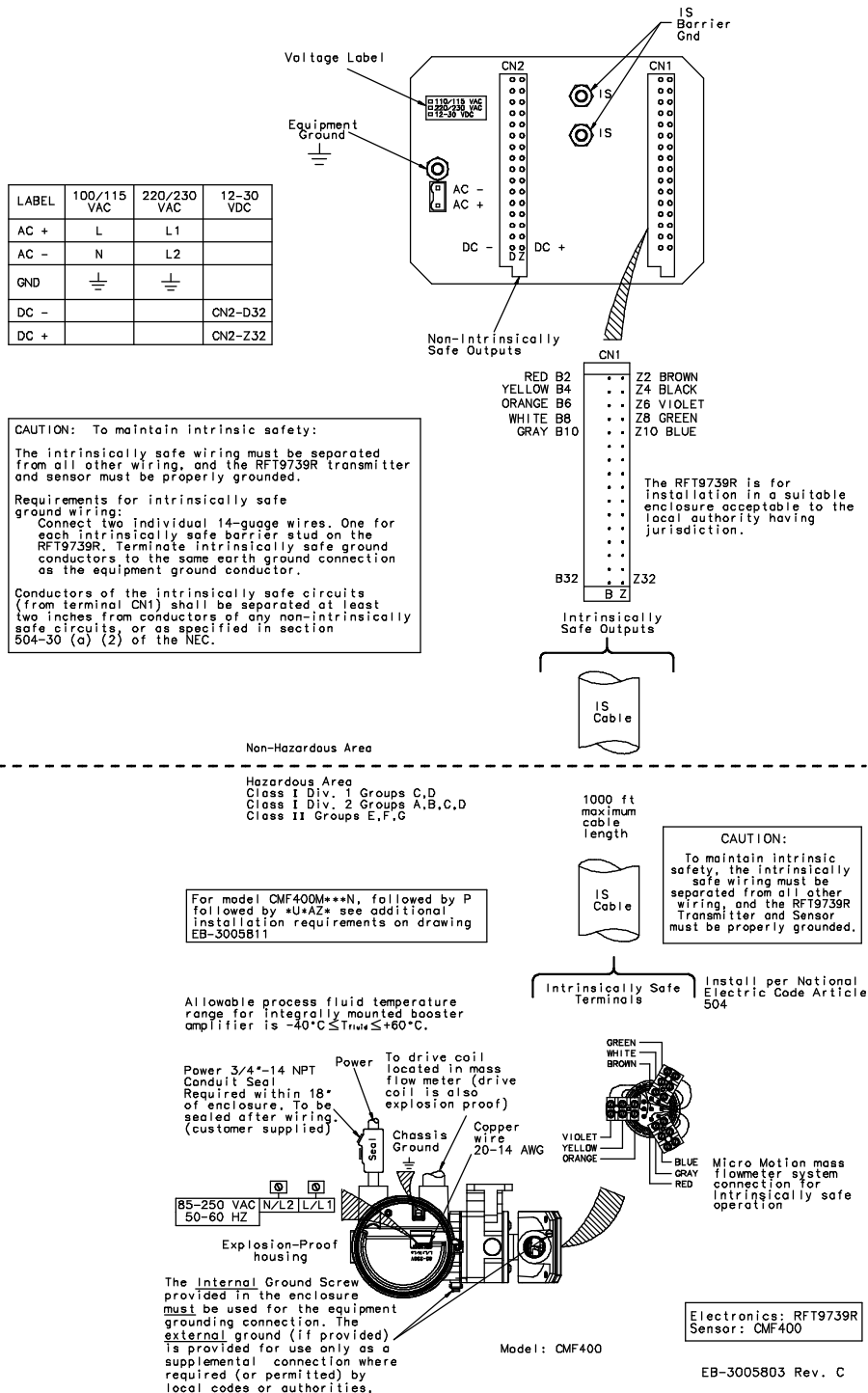
This drawing does not apply to the CMF300A sensor or to the CMF400 sensor with booster amplifier.



## 8.2.3 9739 rack mount with CMF300A sensor

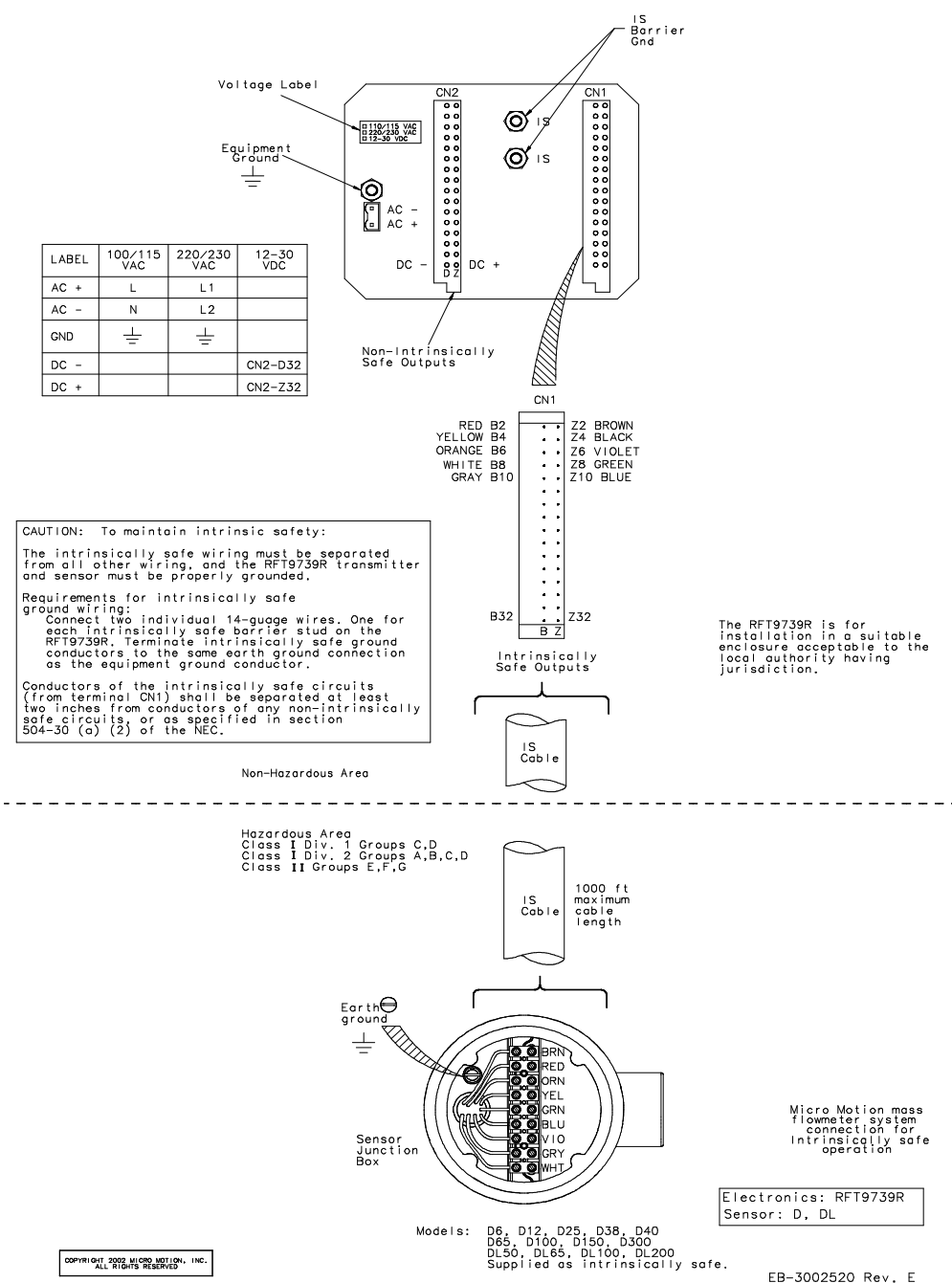


## 8.2.4 9739 rack mount with CMF400A sensor and a booster amplifier



## 8.2.5 9739 rack mount with D or DL sensors

This drawing does not apply to D600 or DT sensors.



## 8.2.6 9739 rack mount with D600 sensor

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Remote Flow Transmitter  
model RFT9739R with  
Sensor D600

Installation Instructions  
Type UL-D-IS

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LABEL	100/115 VAC	220/230 VAC	12-30 VDC
AC +	L	L1	
AC -	N	L2	
GND			
DC -			CN2-D32
DC +			CN2-Z32

**CAUTION:** To maintain intrinsic safety:  
The intrinsically safe wiring must be separated from all other wiring, and the RFT9739R transmitter and sensor must be properly grounded.  
Requirements for intrinsically safe ground wiring:  
Connect two individual 14-gauge wires. One for each intrinsically safe barrier stud on the RFT9739R. Terminate intrinsically safe ground conductors to the same earth ground connection as the equipment ground conductor.  
Conductors of the intrinsically safe circuits (from terminal CN1) shall be separated at least two inches from conductors of any non-intrinsically safe circuits, or as specified in section 504-30 (a) (2) of the NEC.

**Non-Intrinsically Safe Outputs**

RED B2	Z2 BROWN
YELLOW B4	Z4 BLACK
ORANGE B6	Z6 VIOLET
WHITE B8	Z8 GREEN
GRAY B10	Z10 BLUE

**Intrinsically Safe Outputs**

B32	B	Z32
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Non-Hazardous Area

**Hazardous Area**  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

For model DS600S\*\*\*S, followed by P followed by \*U\*AZZ see additional installation requirements on drawing EB-1005077

Allowable process fluid temperature range for integrally mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{\text{max}} \leq 60^{\circ}\text{C}$ .

Power 3/4"-14 NPT Conduit Seal  
To drive coil located in mass flow meter (drive coil is also explosion proof)  
Required within 18" of enclosure. To be sealed after wiring (customer supplied)

Chassis Ground  
Copper wire 20-14 AWG

Explosion-Proof housing

65-250 VAC N/L2/L/L1  
50-60 HZ

1000 ft maximum cable length

**CAUTION:**  
To maintain intrinsic safety, the intrinsically safe wiring must be separated from all other wiring, and the RFT9739R Transmitter and Sensor must be properly grounded.

Intrinsically Safe Terminals

Consult factory for use of spare orange, red and brown (RTD and P.O.) wires (1800)522-6277

Micro Motion mass flowmeter system connection for intrinsically safe operation

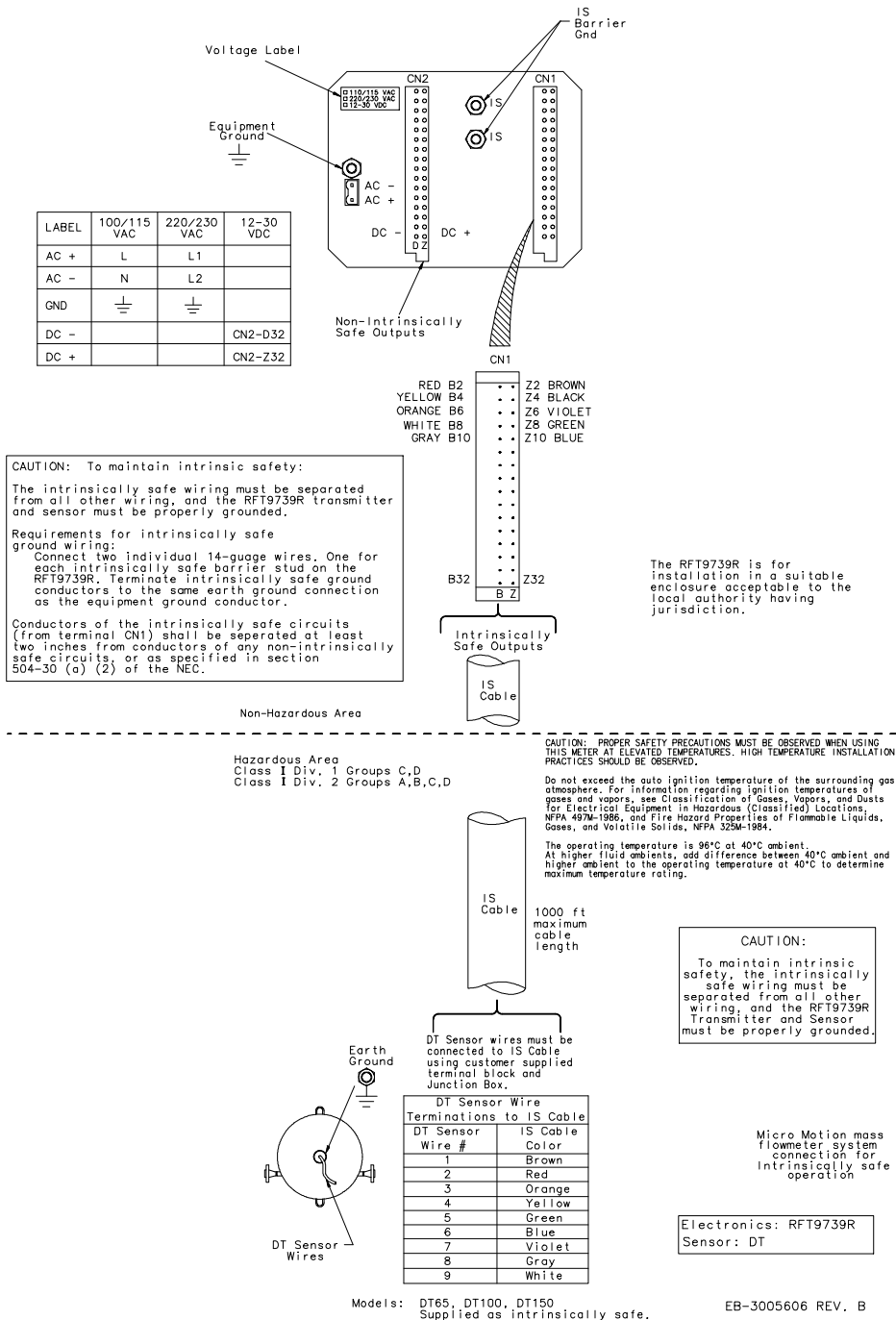
The internal Ground Screw provided in the enclosure must be used for the equipment grounding connection. The external ground (if provided) is provided for use only as a supplemental connection where required (or permitted) by local codes or authorities.

Model: D600

Electronics: RFT9739R  
Sensor: D600

EB-1005070 Rev. B

## 8.2.7 9739 rack mount with DT sensor



## 9 Booster amplifiers

### 9.1 Booster amplifiers with CMF400 sensors

#### List of drawings

Installation	Drawing
<a href="#">Booster amplifier with junction box and CMF400 sensor</a>	EB-3005811, Revision D



## 9.1.1 Booster amplifier with junction box and CMF400 sensor

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Remote Booster Amplifier  
Installation Instructions to  
Sensor CMF400 and J-box

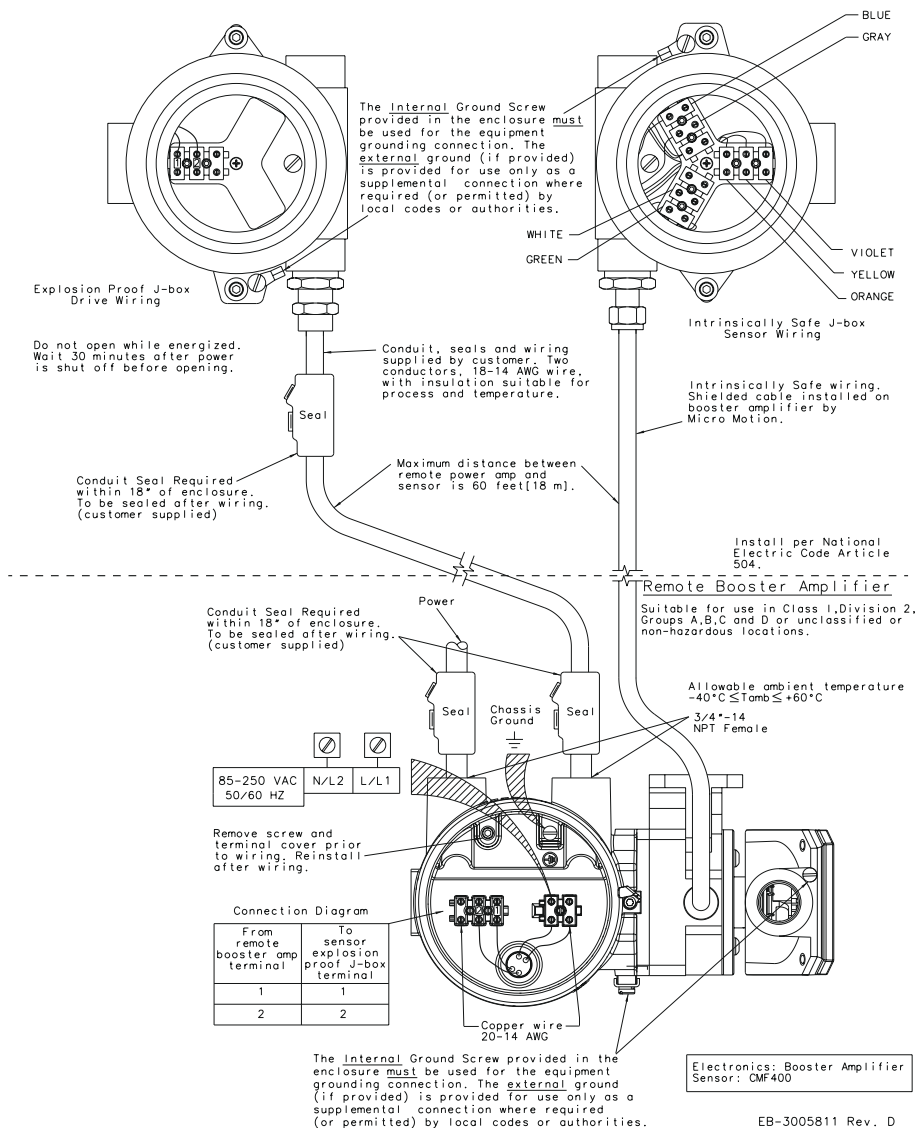
Installation Instructions  
Type UL-D-IS

Conduit seals may not be required for Div. 2 applications. Check local codes for applicability.

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

Allowable process fluid temperature range for remotely mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{\text{fluid}} \leq +200^{\circ}\text{C}$ .

Sensor



## 9.2 Booster amplifiers with D600 sensors

### List of drawings

Installation	Drawing
<a href="#">Booster amplifier with junction box and D600 sensor</a>	EB-1005077, Revision C

## 9.2.1 Booster amplifier with junction box and D600 sensor

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Remote Booster Amplifier  
Installation Instructions to  
Sensor D600 J-box

Installation Instructions  
Type UL-D-1S

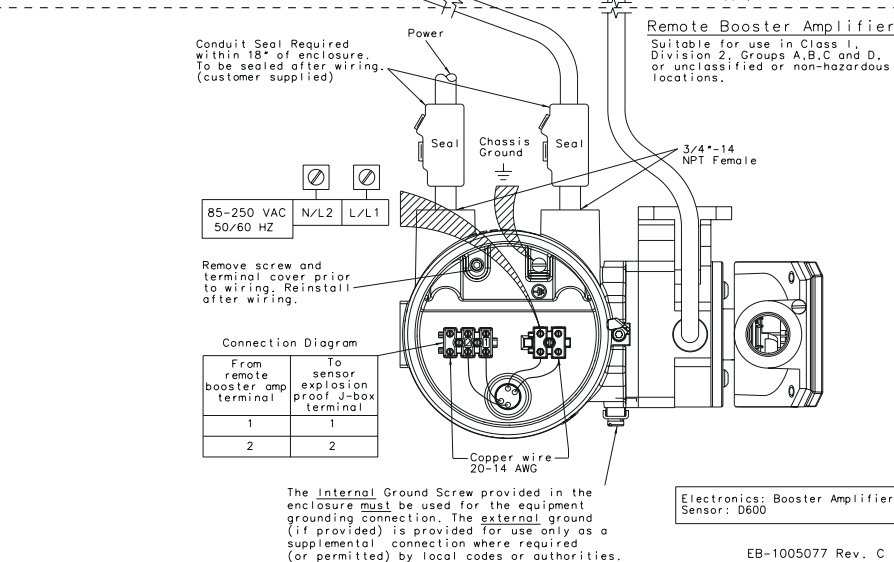
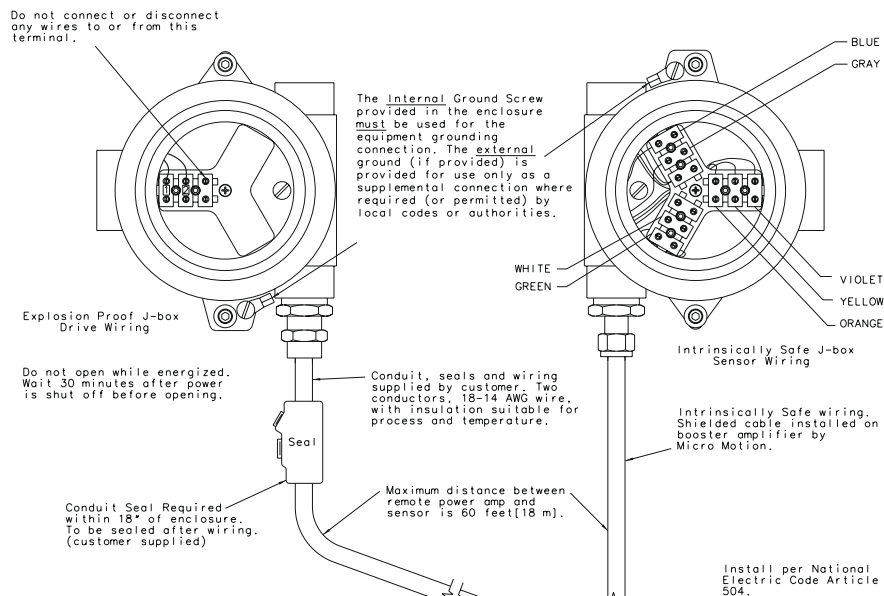
Conduit seals may not be required for Div. 2 applications. Check local codes for applicability.

Hazardous Area  
Class I Div. 1 Groups C,D  
Class I Div. 2 Groups A,B,C,D  
Class II Groups E,F,G

Allowable process fluid temperature range for remotely mounted booster amplifier is  $-40^{\circ}\text{C} \leq T_{\text{fluid}} \leq +100^{\circ}\text{C}$ .

Consult factory for use of spare orange, red and brown (RTD and P.O.) wires.  
1-800-522-6277

### Sensor





20001969  
Rev. BC  
2023

For more information: [Emerson.com](https://www.emerson.com)

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