

REVISIONS		
REV	CR/CHANGE	
A	RELEASE	8/1/2011
B	SECOND PAGES ADDED	6/7/2012
C	INTERTEK UPDATES	4/29/2022

NOTES:

1. SAFE AREA APPARATUS IS NOT SPECIFIED EXCEPT THAT IT MUST NOT BE SUPPLIED FROM NOR CONTAIN IN NORMAL OR ABNORMAL CONDITIONS A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250 VRMS OR 250 VDC.

2. THE TRANSMITTER ENTITY PARAMETERS ARE:

- V_{max} = 28V
- I_{max} = 93mA
- C_i = 18nF
- L_i = 0uH
- P_i = 0.66W (including 300 Ohm series resistance)

CHOOSE A CSA/ETL CERTIFIED BARRIER WITH ENTITY PARAMETERS THAT SATISFY THE FOLLOWING CONDITIONS:

- V_{max} ≥ V_{oc}
- I_{max} ≥ I_{sc}
- C_i + C_{cable} ≤ C_a
- L_i + L_{cable} ≤ L_a
- P_i ≥ P_o

SUITABLE BARRIERS INCLUDE:

MTL 7087+, MTL 787+, MTL 7X87+ OR EQUIVALENT

SUITABLE GALVANIC ISOLATION SAFETY BARRIERS INCLUDE:

STAHL 9303/11-22-11 OR EQUIVALENT

3. INSTALL IN ACCORDANCE WITH THE APPROPRIATE NATIONAL ELECTRICAL REQUIREMENTS AND PER THE BARRIER INSTRUCTIONS.

4. THE TRANSMITTER MUST BE INSTALLED IN A SUITABLE ENCLOSURE ACCEPTABLE TO THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

⑤ THE TRANSMITTER PROBE ENTITY PARAMETERS ARE:

- V_{oc} = 5.36V
- I_{sc} = 93mA
- C_a = 62uF
- L_a = 8.5mH
- P_o = 0.5W

THE SERIES 10,000 PROBE TOGETHER WITH ITS 10,000 EXTENSION CABLE AND 8093 CONNECTOR INSULATOR MAY BE REPLACED BY ANY CSA CERTIFIED INTRINSICALLY SAFE PROBE THAT SATISFIES THE FOLLOWING CONDITIONS:

- V_{max} ≥ V_{oc}
- I_{max} ≥ I_{sc}
- C_i + C_{cable} ≤ C_a
- L_i + L_{cable} ≤ L_a
- P_i ≥ P_o

CLASS I, DIV. 1, GROUPS A, B, C, D
T4, Tamb: -40°C to 85°C

WARNING – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

Exia, INTRINSICALLY SAFE, CLASS I, DIV. 1, GROUPS A – D, Tcode: T4, -40°C ≤ Tamb ≤ 85°C

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQCJE.

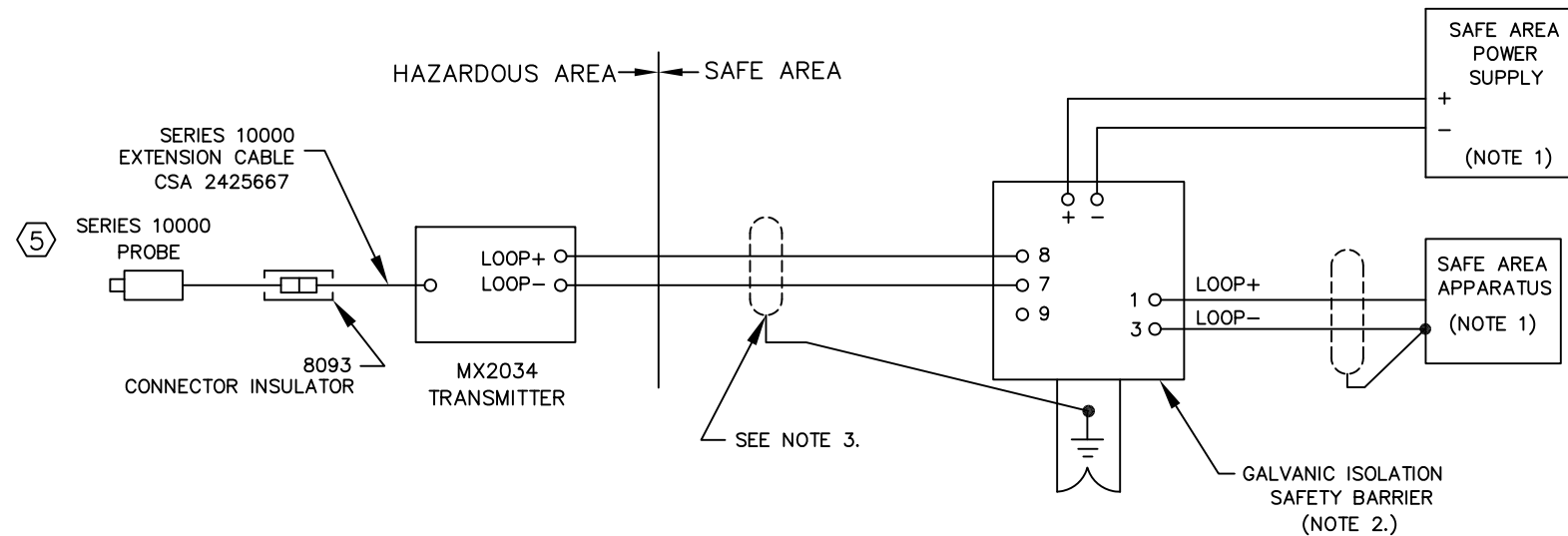
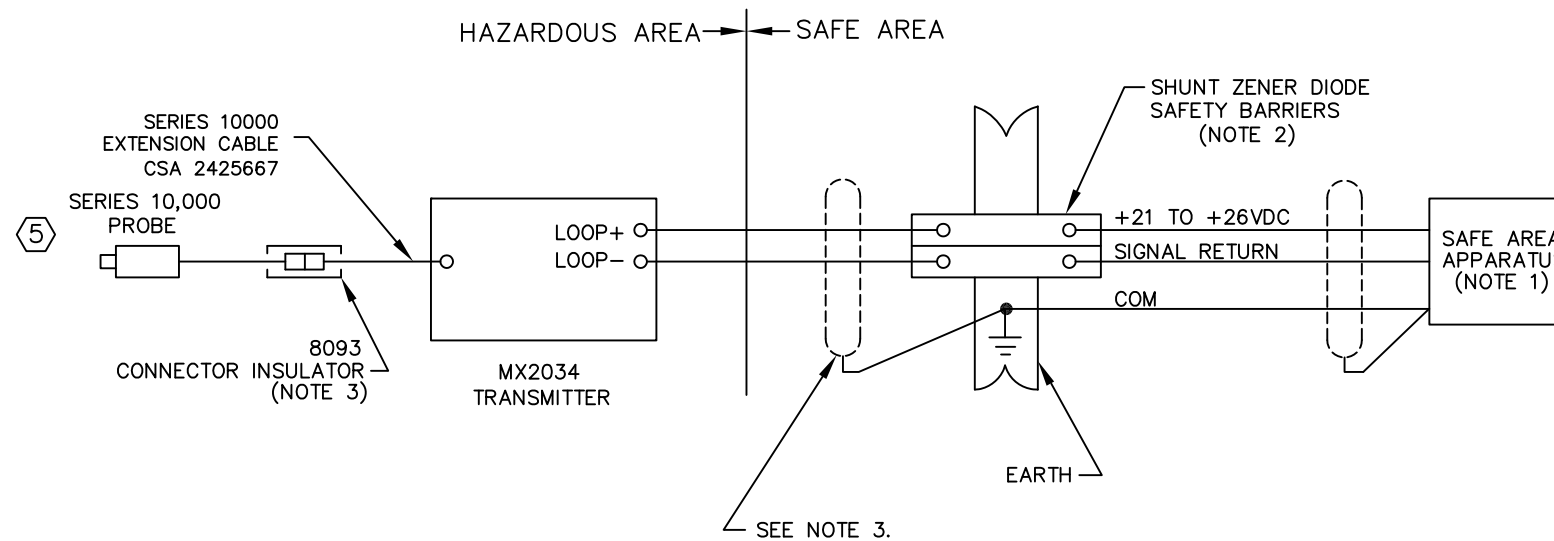
WARNING – TO PREVENT IGNITION OF FLAMMABLE OR COMPUSTABLE ATMOSPHERES. DISCONNECT POWER BEFORE SERVICING.

WARNING – TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTABLE ATMOSPHERES; READ, UNDERSTAND AND ADHERE TO THE MANUFACTURE'S LIVE MAINTENANCE PROCEDURES.

⚠ REFER TO MANUAL 100545 FOR MAINTENANCE AND OPERATING INSTRUCTIONS.

AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS DEBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, A MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.

INTRINSICALLY SAFE INSTALLATION, 2 WIRE
NORTH AMERICAN STANDARDS



AGENCY APPROVED PRODUCT
DO NOT DEVIATE FROM DOCUMENTED CONSTRUCTION OR LISTED PARTS

MATERIAL:	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. ALL CORNERS BROKEN TO .010 MIN RADIUS AND TOLERANCES ARE:	APPROVALS	DATE	
FINISH:	FRACTIONS: DECIMALS: ±1/64 .XX ±.01 ANGLES: .XXX ±.005 ±1° SURFACE FINISH 64	DRAWN BY: A. Wilson	08-01-11	
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		APPROVED BY:		
DO NOT SCALE DRAWING			DRAWING NO. 100506	REV. C
SCALE: 1:1			SHEET: 1 of 3	

NOTES:

1. SAFE AREA APPARATUS IS NOT SPECIFIED EXCEPT THAT IT MUST NOT BE SUPPLIED FROM NOR CONTAIN IN NORMAL OR ABNORMAL CONDITIONS A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250 VRMS OR 250 VDC.

2. THE SAFETY BARRIER MUST BE:
 LOOP POWER CONNECTION: 24VDC POWERED GALVANIC ISOLATOR WITH THE FOLLOWING OR LOWER OUTPUT PARAMETERS:
 $U_o = 25.4V$
 $I_o = 86.8mA$
 $P_o = 0.551W$

A SUITABLE EXAMPLE IS A KFD1-STC4-Ex1 OR EQUIVALENT

DYNAMIC SIGNAL CONNECTION: 24VDC POWERED GALVANIC ISOLATOR WITH THE FOLLOWING OR LOWER OUTPUT PARAMETERS:
 $U_o = 15.5V$
 $I_o = 7.2mA$
 $P_o = 0.028W$

A SUITABLE EXAMPLE IS A KFD2-VR-Ex1.19-Y109129 OR EQUIVALENT

THE BARRIER MUST BE CERTIFIED, BY CSA OR ANY NRTL/ETL APPROVED CERTIFICATION BODY TO [EEx ia] IIC.

GALVANIC ISOLATORS MUST BE RATED FOR AT MINIMUM THE LIMITS OF CAPACITANCE AND INDUCTANCE SHOWN IN TABLE 2.

TABLE 1			
DIODE RETURN BARRIER			
GROUP	CAPACITANCE uF	INDUCTANCE mH	L/R RATIO uH/OHM
IIC	0.065	4.1	54
IIB	0.231	12.3	162
IIA	0.646	32.8	432

TABLE 2			
GALVANIC ISOLATOR			
GROUP	CAPACITANCE uF	INDUCTANCE mH	L/R RATIO uH/OHM
IIC	0.065	4.3	56
IIB	0.632	17.72	210
IIA	2.132	36.02	444

TABLE 3			
EXTERNAL PROBE CABLE			
GROUP	CAPACITANCE uF	INDUCTANCE mH	L/R RATIO uH/OHM
IIC	32	500	4000
IIB	720	1000	17000
IIA	1000	1000	35000

3. INSTALL IN ACCORDANCE WITH THE APPROPRIATE NATIONAL ELECTRICAL REQUIREMENTS AND PER THE BARRIER INSTRUCTIONS.

4. THE TRANSMITTER MUST BE INSTALLED IN A SUITABLE ENCLOSURE ACCEPTABLE TO THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

⑤ THE TRANSMITTER PROBE ENTITY PARAMETERS ARE:

- $V_{oc} = 5.36V$
- $I_{sc} = 94mA$
- $C_a = 62uF$
- $L_a = 8.5mH$
- $P_o = 0.5W$

THE SERIES 10,000 PROBE TOGETHER WITH ITS 10,000 EXTENSION CABLE AND 8093 CONNECTOR INSULATOR MAY BE REPLACED BY ANY CSA CERTIFIED INTRINSICALLY SAFE PROBE THAT SATISFIES THE FOLLOWING CONDITIONS:

- $V_{max} \geq V_{oc}$
- $I_{max} \geq I_{sc}$
- $C_i + C_{cable} \leq C_a$
- $L_i + L_{cable} \leq L_a$
- $P_i \geq P_o$

CLASS I, DIV. 1, GROUPS A, B, C, D
 T4, Tamb: -40°C to 85°C

WARNING - SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

Exia, INTRINSICALLY SAFE, CLASS I, DIV. 1, GROUPS A - D, Tcode: T4, -40°C ≤ Tamb ≤ 85°C

AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQCJE.

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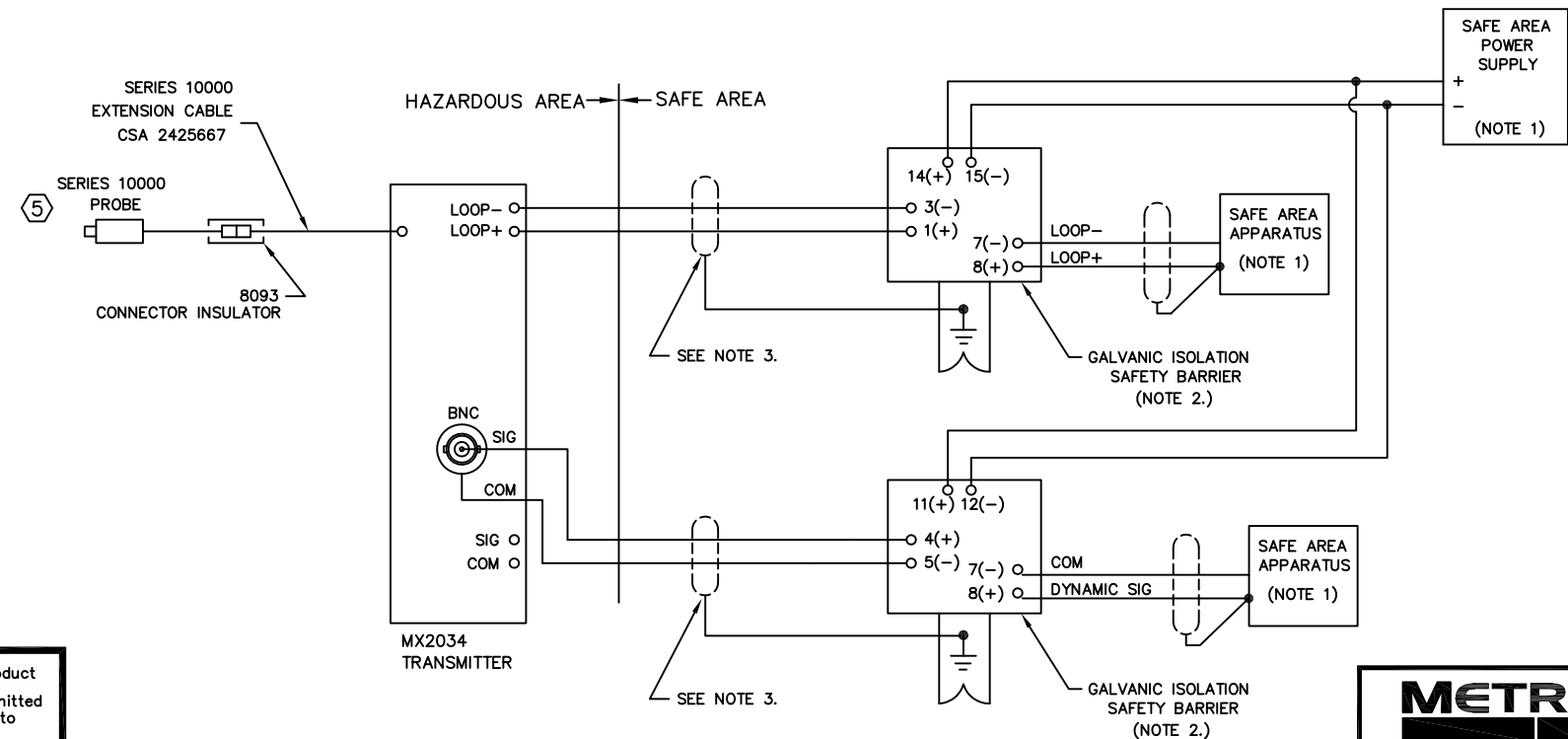
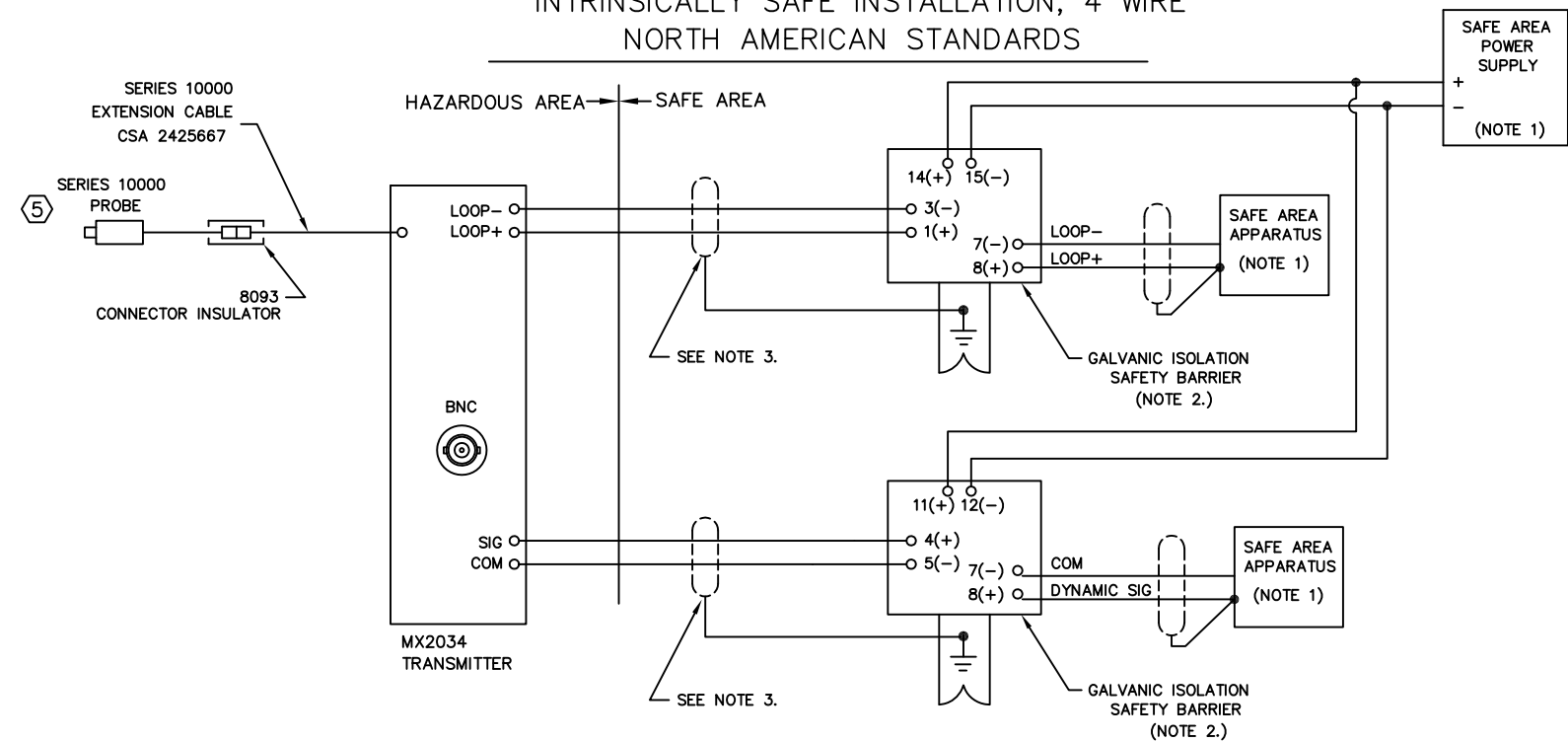
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Baseefa Certified Product
 No modifications permitted
 without reference to
 Baseefa

INTRINSICALLY SAFE INSTALLATION, 4 WIRE
 NORTH AMERICAN STANDARDS



METRIX HOUSTON, TEXAS USA

INTRINSICALLY SAFE
 INSTALLATION (INTERTEK)
 MX2033 & MX2034

SIZE B PART NO. 100506 REV. C

SCALE: 1:1 DOCUMENT NO.: 100506-DWG SHEET: 2 of 3

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2. ENTITY INSTALLATION:
PROBE DRIVER ENTITY PARAMETERS ARE:

$V_{max} = 30V$
 $I_{max} = 150mA$
 $C_i = 52nF$
 $L_i = 160uH$

CHOOSE A CSA/ETL CERTIFIED BARRIER WITH ENTITY PARAMETERS THAT SATISFY THE FOLLOWING CONDITIONS:

$V_{max} \geq V_{oc}$
 $I_{max} \geq I_{sc}$
 $C_i + C_{cable} \leq C_a$
 $L_i + L_{cable} \leq L_a$

SUITABLE BARRIERS INCLUDE:

MTL 787S (-) AND STAHL 9002/13-280-093-00

SUITABLE GALVANIC ISOLATION SAFETY BARRIERS INCLUDE:

STAHL 9307/11-99-10

3. INSTALL IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE PART I AND PER THE BARRIER INSTRUCTIONS.

4. PROBE DRIVER MUST BE INSTALLED IN A SUITABLE ENCLOSURE ACCEPTABLE TO THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.

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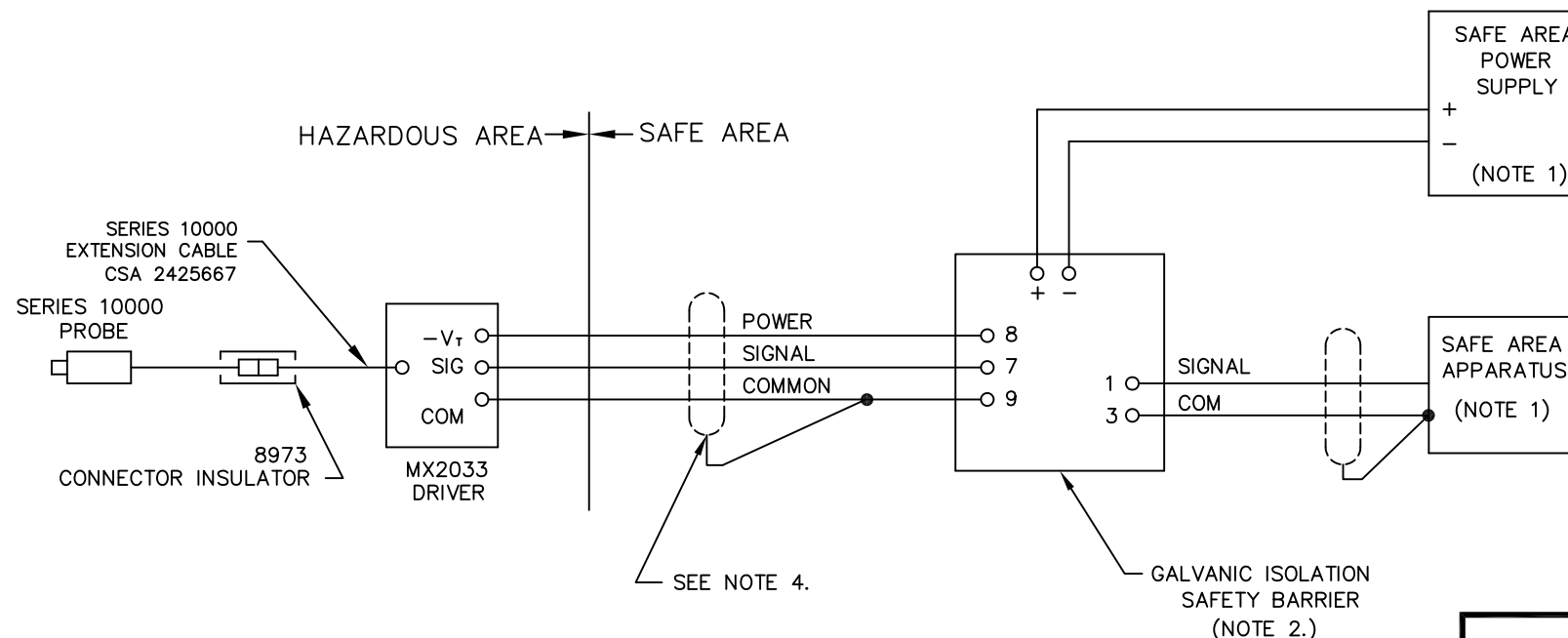
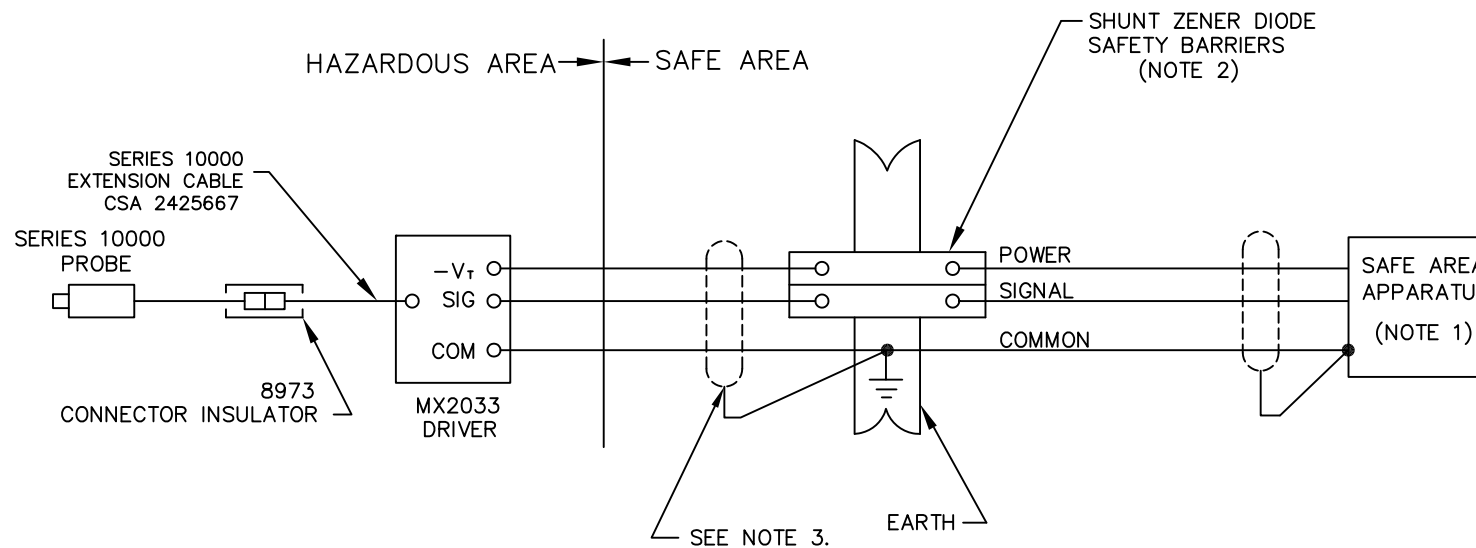
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INTRINSICALLY SAFE INSTALLATION
NORTH AMERICAN STANDARDS



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OR LISTED PARTS

METRIX
HOUSTON, TEXAS U.S.A.

INTRINSICALLY SAFE
INSTALLATION (INTERTEK)
MX2033 & MX2034

SIZE **B** PART NO.: 100506 REV. C
SCALE: 1:1 DOCUMENT NO.: 100506-DWG SHEET: 3 of 3