

NOTES:

- 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.
- THE SAFETY BARRIER MUST BE:  
 A 28V, 300 OHM AND A 28V DIODE RETURN DUAL CHANNEL SHUNT ZENER DIODE SAFETY BARRIER HAVING THE FOLLOWING OR LOWER OUTPUT PARAMETERS:  
 $U_z = 28V$   
 $I_o = 93mA$   
 $P_o = 0.66W$   
 A SUITABLE EXAMPLE IS MTL#7087+.  
  
 THE BARRIERS MUST BE CERTIFIED BY BASEEFA OR ANY EEC APPROVED CERTIFICATION BODY TO [EEEx ia] IIC AND THE OUTPUT CURRENT MUST BE LIMITED BY A RESISTOR "R" SUCH THAT:  $I_o = v_z/R$   
  
 A 24VDC POWERED GALVANIC ISOLATOR WITH THE FOLLOWING OR LOWER OUTPUT PARAMETERS:  
 $U_z = 28V$   
 $I_o = 91mA$   
 $P_o = 0.637W$   
 A SUITABLE EXAMPLE IS A STAHL 9303/11-22-11.  
 THE BARRIER MUST BE CERTIFIED, BY BASEEFA OR ANY EEC APPROVED CERTIFICATION BODY TO [EEEx ia] IIC.
- THE CAPACITANCE AND EITHER THE INDUCTANCE OR INDUCTANCE TO RESISTANCE (L/R) RATIO OF THE INTERCONNECTING CABLE MUST NOT EXCEED THE VALUES IN TABLE 3. THE VALUES IN THE TABLE HAVE TAKEN ACCOUNT OF  $C_{eq}$  AND  $L_{eq}$ .
- THE CAPACITANCE AND EITHER THE INDUCTANCE OR INDUCTANCE TO RESISTANCE (L/R) RATIO OF THE INTERCONNECTING CABLE MUST NOT EXCEED THE VALUES IN TABLE 1 OR TABLE 2, WHICHEVER IS APPLICABLE. THE VALUES IN THE TABLE HAVE TAKEN ACCOUNT OF  $C_{eq}$  AND  $L_{eq}$ .
- THE HAZARDOUS AREA CABLE IS TO BE INSTALLED AS EITHER A SEPARATE CABLE OR A SEPARATE CIRCUIT WITHIN A "TYPE A" CABLE OR WITHIN A "TYPE B" CABLE AS DEFINED IN CLAUSE 8 OF EN60079-25:2003. THE PEAK VOLTAGE OF ANY CIRCUIT IN THE "TYPE B" CABLE MUST NOT EXCEED 60V.
- THE INSTALLATION MUST COMPLY WITH THE APPROPRIATE NATIONAL INSTALLATION REQUIREMENTS. EXAMPLE: BS 6704: 1996/EN60079-14:1997
- SYSTEM LABEL METRIX P/N: 8446-015 SHOULD APPEAR ON OR ADJACENT TO THE PRINCIPAL ITEM OF THE ELECTRICAL APPARATUS IN THE SYSTEM OR AT THE INTERFACE BETWEEN THE INTRINSICALLY SAFE AND NON-INTRINSICALLY SAFE CIRCUIT.
- THE SERIES 10,000 PROBE TOGETHER WITH ITS 10,000 EXTENSION CABLE AND 8093 CONNECTOR INSULATOR MAY BE REPLACED BY A BENTLY NEVADA 3300 PROXIMITY TRANSDUCER SYSTEM PROBE AND CABLE (BAS 99ATEX1099).
- THE APPARATUS ENCLOSURE IS MADE FROM PLASTIC WHICH MUST BE PROTECTED AGAINST IMPACT AND FRICTION.

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

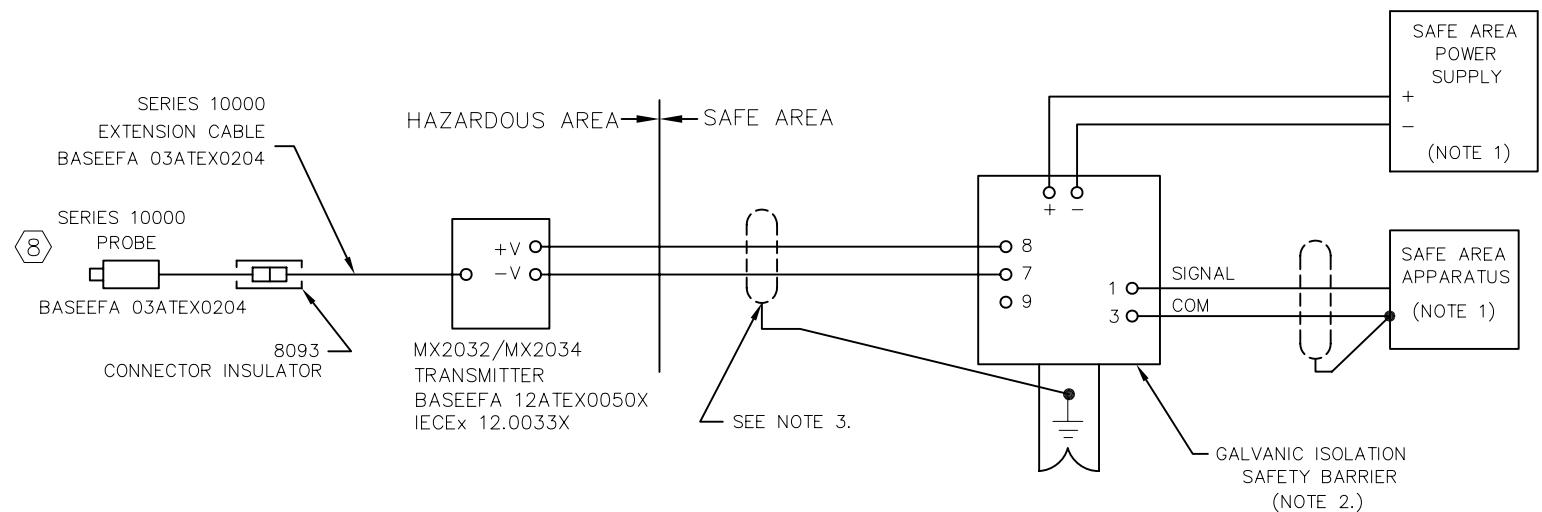
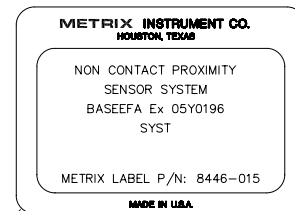
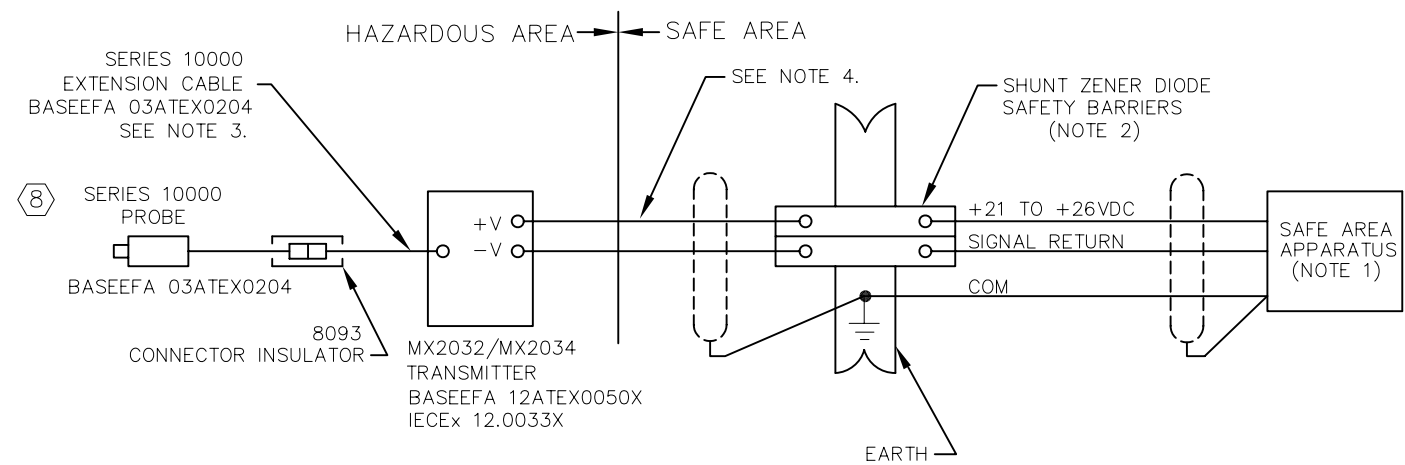
TABLE 3			
EXTERNAL PROBE CABLE			
GROUP	CAPACITANCE uF	INDUCTANCE mH	L/R RATIO uH/OHM
IIC	32	500	4000
IIB	720	1000	17000
IIA	1000	1000	35000

SPECIAL CONDITIONS OF SAFE USE:

TRANSMITTER MUST BE INSTALLED IN AN ENCLOSURE COMPLYING WITH IP 20.

THE APPARATUS IS NOT CAPABLE OF WITHSTANDING THE 500V INSULATION TEST REQUIRED BY CLAUSE 6.4.12 OF EN 50020:2002 OR CLAUSE 6.8.1 OF EN 60079-15:2005. THIS MUST BE TAKEN INTO ACCOUNT WHEN INSTALLING THE APPARATUS.

## INSTALLATION PROXIMITY TRANSMITTER IN HAZARDOUS LOCATION ATEX/IECEX



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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	<b>METRIX</b> HOUSTON, TEXAS U.S.A.
FINISH:		DRAWN BY: A. Wilson	08-01-11	
THIS DOCUMENT AND ALL INFORMATION HEREON IS THE PROPERTY OF METRIX INSTRUMENT CO. APPROVAL MUST BE OBTAINED BEFORE IT IS REPRODUCED OR INFORMATION HEREON IS ISSUED TO A THIRD PARTY. THIS DOCUMENT MUST BE RETURNED UPON REQUEST.	FRACTIONS: DECIMALS: ±1/64 .XX ±.01 ANGLES: .XXX ±.005 ±1" SURFACE FINISH 64	CHECKED BY:		
		APPROVED BY:		
		MX2034 MX2032		INTRINSICALLY SAFE, INSTALLATION (ATEX/IECEX) MX2032/MX2033/MX2034
		NEXT ASSY USED ON		SIZE <b>B</b> PART NO.: 100508 REV. A
		APPLICATION	DO NOT SCALE DRAWING	SCALE: 1:1 DOCUMENT NO.: 100508-DWG SHEET: 1 of 2

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. THE SOURCE MUST BE DERIVED ONLY FROM LINEAR (RESISTIVELY LIMITED) SOURCES.

2. THE SAFETY BARRIER MUST BE

EITHER A 26V, 300 OHM AND A 20V, 390 OHM DUAL CHANNEL SHUNT ZENER DIODE SAFETY BARRIER HAVING THE FOLLOWING OR LOWER PARAMETERS:

$U_z = 26V$   
 $I_o = 138mA$   
 $P_o = 0.81W$

OR A 28V, 300 OHM AND A 28V DIODE RETURN DUAL CHANNEL SHUNT ZENER DIODE SAFETY BARRIER HAVING THE FOLLOWING OR LOWER OUTPUT PARAMETERS:

$U_z = 28V$   
 $I_o = 93mA$   
 $P_o = 0.66W$

THE BARRIERS MUST BE CERTIFIED BY BASEEFA OR ANY EEC APPROVED CERTIFICATION BODY TO [EEx ia] IIC AND THE OUTPUT CURRENT MUST BE LIMITED BY A RESISTOR "R" SUCH THAT:  $I_o = v_z/R$

OR A 24VDC POWERED GALVANIC ISOLATOR WITH THE FOLLOWING OR LOWER OUTPUT PARAMETERS:

$U_z = 26.5V$   
 $I_o = 112mA$   
 $P_o = 0.742W$

THE BARRIER MUST BE CERTIFIED, BY BASEEFA OR ANY EEC APPROVED CERTIFICATION BODY TO [EEx ia] IIC.

3. CIRCUIT IN HAZARDOUS AREA MUST BE CAPABLE OF WITHSTANDING A VOLTAGE TEST OF 500 VRMS TO EARTH OR TO THE FRAME OF THE APPARATUS. THE PROBE DRIVER IS CAPABLE OF WITHSTANDING THE INSULATION TEST REQUIRED BY CLAUSE 6.4.12 OF EN50 020 (2002). USE 8973 INSULATOR ON CONNECTOR BETWEEN PROBE AND EXTENSION CABLE.

4. THE CAPACITANCE AND EITHER THE INDUCTANCE OR INDUCTANCE TO RESISTANCE (L/R) RATIO OF THE INTERCONNECTING CABLE MUST NOT EXCEED THE VALUES IN TABLE 1. THE VALUES IN THE TABLE HAVE TAKEN ACCOUNT OF  $C_{eq} = 0.012\mu F$  AND  $L_{eq} = 0.2mH$ .

5. PROBE DRIVER MUST BE INSTALLED IN AN ENCLOSURE COMPLYING WITH IP 20.

6. THE HAZARDOUS AREA CABLE IS TO BE INSTALLED AS EITHER A SEPARATE CABLE OR A SEPARATE CIRCUIT WITHIN A "TYPE A" CABLE OR WITHIN A "TYPE B" CABLE AS DEFINED IN EN 50039 (1980). THE PEAK VOLTAGE OF ANY CIRCUIT IN THE "TYPE B" CABLE MUST NOT EXCEED 60V.

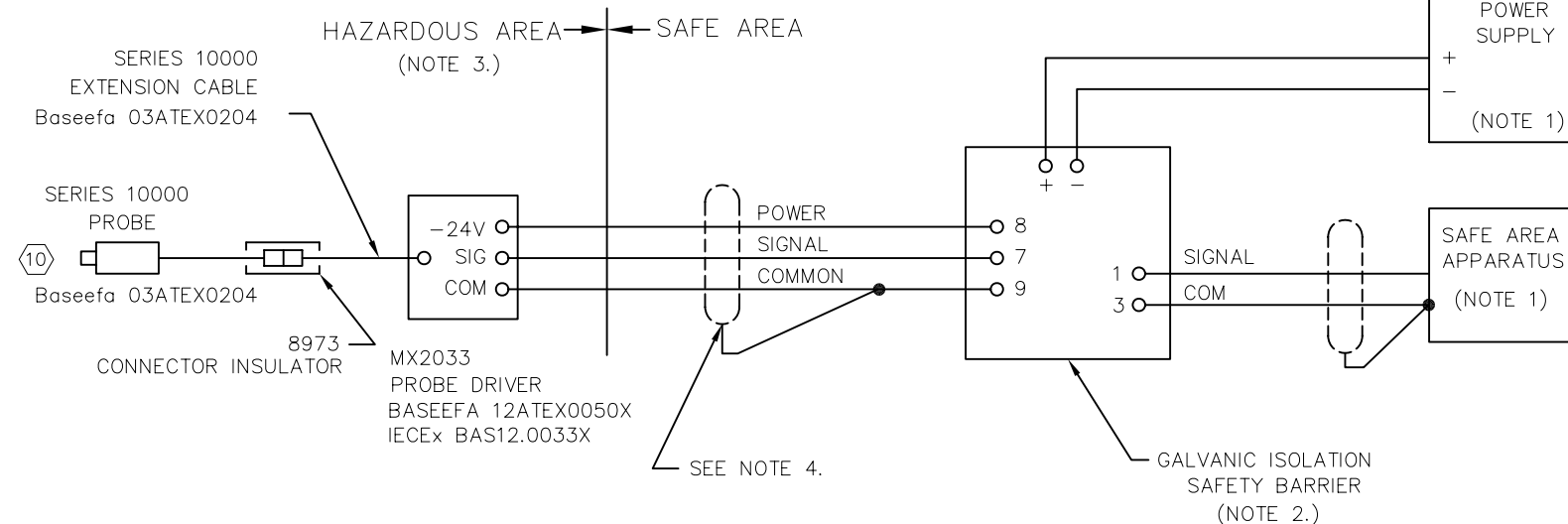
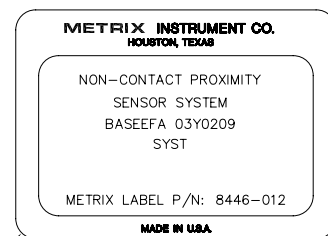
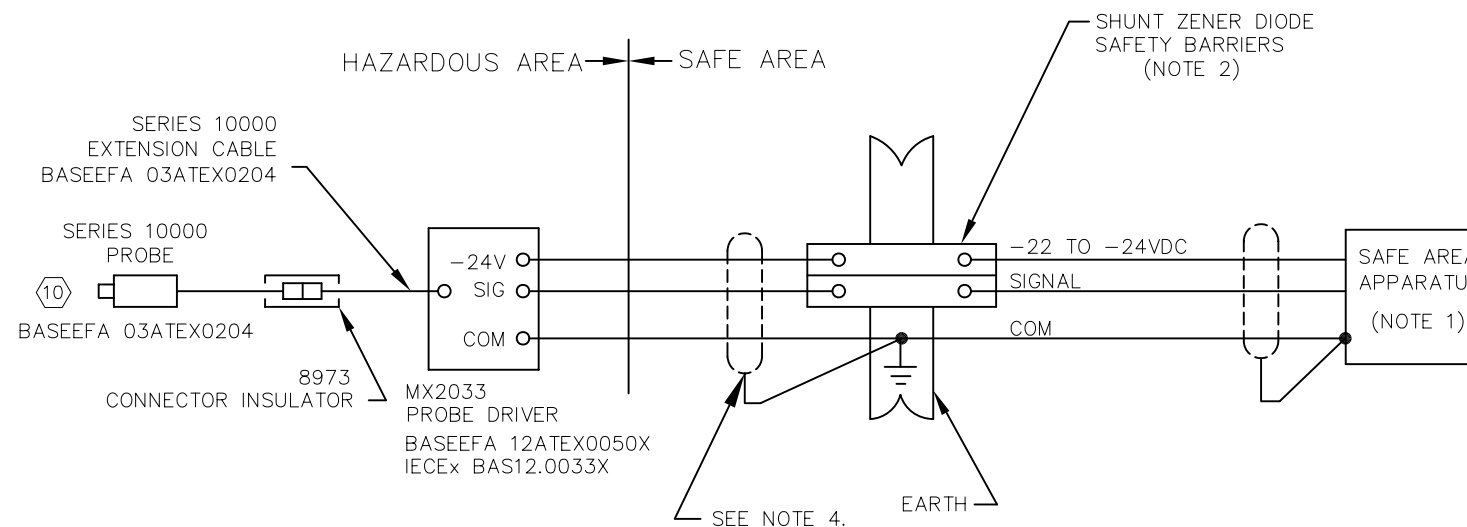
7. THE INSTALLATION MUST COMPLY WITH THE APPROPRIATE NATIONAL INSTALLATION REQUIREMENTS. EXAMPLE: UK. BS5345 PART 4 (1977).

⑧ SYSTEM LABEL METRIX P/N: 8446-012 MUST APPEAR ON OR ADJACENT TO THE PRINCIPAL ITEM OF THE ELECTRICAL APPARATUS IN THE SYSTEM OR AT THE INTERFACE BETWEEN THE INTRINSICALLY SAFE AND NON-INTRINSICALLY SAFE CIRCUIT.

⑨ SYSTEM LENGTH IS A MAXIMUM OF NINE METERS.

⑩ THE SERIES 10,000 PROBE TOGETHER WITH ITS 10,000 EXTENSION CABLE AND 8093 CONNECTOR INSULATOR MAY BE REPLACED BY A BENTLY NEVADA 3300 PROXIMITY TRANSDUCER SYSTEM PROBE AND CABLE (BAS 99ATEX1099).

## INSTALLATION PROBE DRIVER IN HAZARDOUS LOCATION ATEX/IECEX



GROUP	CAPACITANCE uF	INDUCTANCE mH	L/R RATIO uH/OHM
IIC	0.083	1.73	38
IIB	0.65	8.29	151
IIA	2.15	16.7	314

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DOCUMENTED CONSTRUCTION  
OR LISTED PARTS

**METRIX**  
HOUSTON, TEXAS U.S.A.

INTRINSICALLY SAFE, INSTALLATION  
(ATEX/IECEX)  
MX2032/MX2033/MX2034

SIZE <b>B</b>	PART NO.: 100508	REV. A
SCALE: 1:1		DOCUMENT NO.: 100508-DWG
		SHEET: 2 of 2