

TLS-300 CONSOLE

AMBIENT TEMPERATURE RANGE

$$0^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$$

[Ex ia Ga] IIA

TLS-300 CONSOLE

CERTIFICATE NO.:
IECEX UL 11.0002X

NON-HAZARDOUS AREA

ASSOCIATED APPARATUS

TLS RF CONSOLE

CERTIFICATE NOS.:
IECEX UL 06.0003X

UNSPECIFIED RECEIVER

AC NEUTRAL
CHASSIS GROUND
AC LINE

TLS RF CONSOLE

OPTICALLY ISOLATED
INTRINSICALLY SAFE
CIRCUITS

INTRINSICALLY SAFE
MODULES

HAZARDOUS AREA

INTRINSICALLY SAFE (I.S.) APPARATUS

AMBIENT TEMPERATURE RANGE

$$-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$$

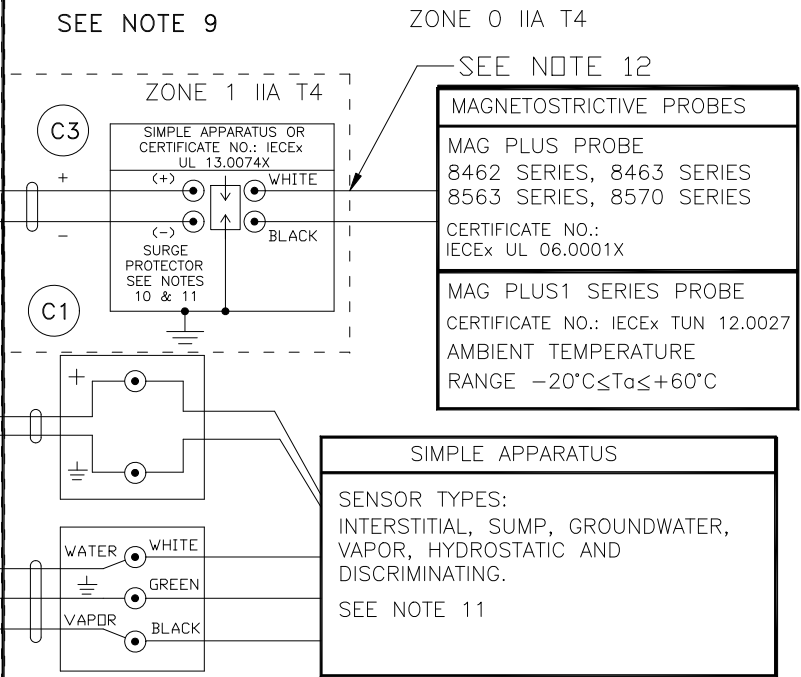
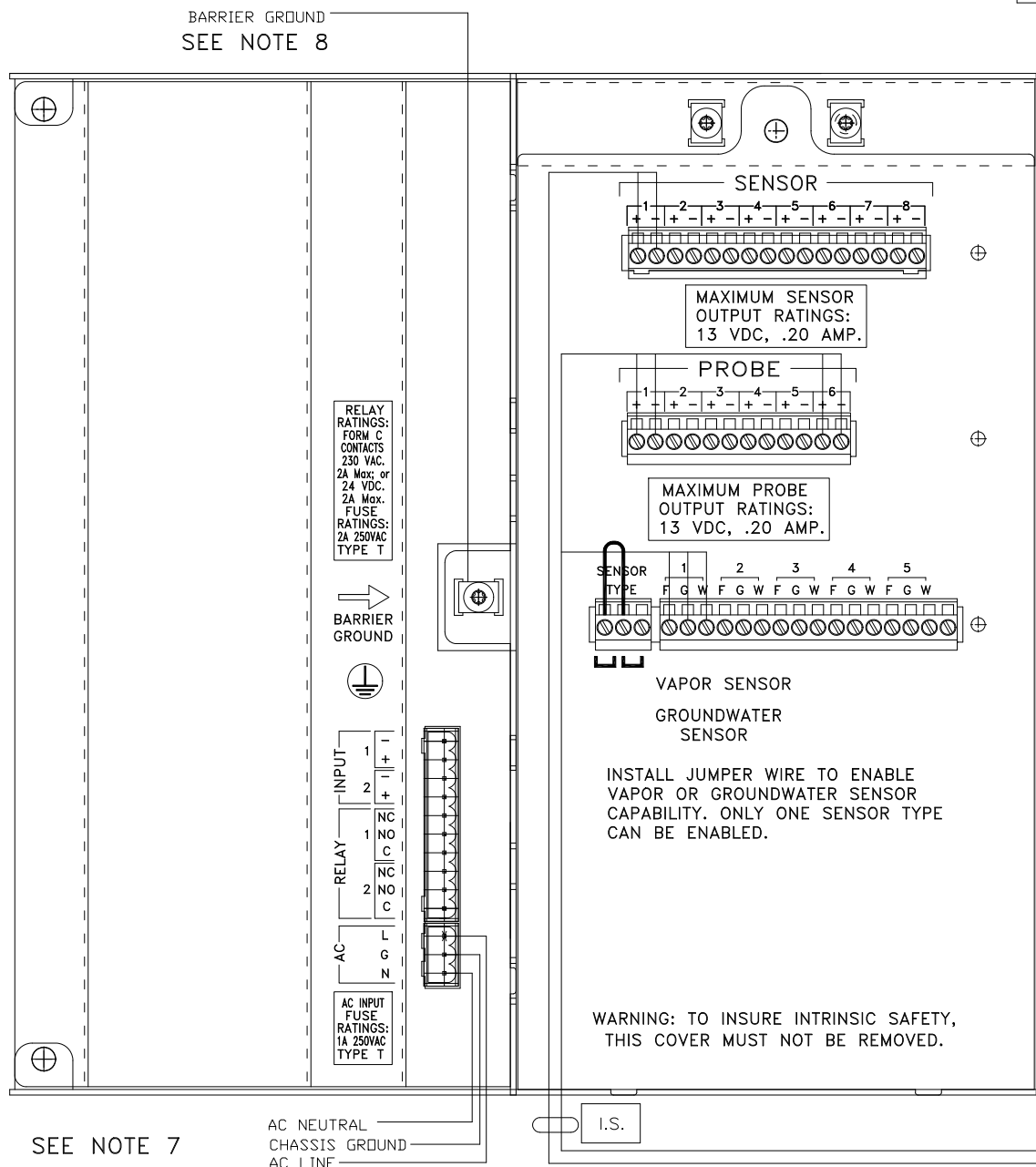
Ex ia IIA T4 Ga

(C2) Ex ia IIA T4 Gb

Ex ia IIA T4 Ga/Gb

Certified Product
No changes permitted
without reference to the
"Notified Body (NB)"

REV	DESCRIPTION	BY	DATE	ECO
A	INITIAL RELEASE	KG	01/07/11	CN-02924
B	ADDED MAG PLUS1 CERTIFICATION NO.: IECEX TUN 12.0027	TB	2012/07/26	CN-05345
C	1. UPDATE GROUNDING SYMBOL. 2. ADD PROTECTIVE STRING 3. ADD CERT. No: IECEX UL 13.0074X 4. REVISED NOTE 9. 5. REVISED NOTE 15. 6. ADD NOTE 16	TKR	10/17/2013	CN-06776



SEE SHEET 2 FOR NOTES

DO NOT SCALE DRAWING				
DESIGNER	NAME	DATE	NEXT GRP.	-----
K. GIBSON	K. GIBSON	01/07/11	ASSEMBLY	-----
B. ANDREW	B. ANDREW	01/07/11	FORM NO	-----
MATERIAL		SIMSBURY, CONNECTICUT 06070 U.S.A.		
NOTICE - THIS DOCUMENT IS THE PROPERTY OF THE VEEDER-ROOT COMPANY AND IS NOT TO BE DISCLOSED, REPRODUCED IN WHOLE OR IN PART, OR USED FOR MANUFACTURE BY ANYONE WITHOUT VEEDER-ROOT'S WRITTEN CONSENT.				
REFERENCE MFG. SPEC. VRS 81005 WHERE IT IS APPLICABLE		DESCRIPTIVE SYS DOCUMENT IECEX TLS-300 CONSOLES		
UNSPECIFIED TOLERANCES +/- ---	SIZE D	DRAWING NUMBER 331940-102	REV. C	STATUS NFP
SCALE NONE		SHEET 1 OF 2		


NOTES:

1. A MAXIMUM CABLE LENGTH OF 305 METERS OR 1,000 FEET IS ALLOWED TO CONNECT ANY SINGLE I.S. DEVICE TO THE ASSOCIATED APPARATUS. THE TOTAL ALLOWABLE CABLE LENGTH USED TO CONNECT ALL OF THE I.S. DEVICES TO THE ASSOCIATED APPARATUS IS 9,753 METERS OR 32,000 FEET.
2. EACH CABLE (OR WIRING) USED TO CONNECT I.S. DEVICES TO THE CONSOLE MUST NOT EXCEED A CAPACITANCE OF 328 pf/METER OR 100 pf/FOOT.
3. THE TOTAL CABLE CAPACITANCE, COMBINING ALL OF THE CABLE USED TO CONNECT THE INTRINSICALLY SAFE DEVICES TO THE ASSOCIATED APPARATUS, MUST NOT EXCEED 3,2μF.
4. EACH CABLE MUST NOT EXCEED AN INDUCTANCE OF 0,656 μH/METER OR 0,2 μH/FOOT.
5. THE L/R RATIO OF THE CABLE MUST NOT EXCEED 200 μH/OHM.
6. FOR EACH TLS-300 CONSOLE INSTALLED THE MAXIMUM NUMBER OF I.S. DEVICES CONNECTED TO THE ASSOCIATED APPARATUS IS 32. A MAXIMUM OF TWO TLS RF CONSOLES CAN BE CONNECTED TO THE TLS-300 CONSOLE, WHERE EACH CONNECTED TLS RF CHANNEL EQUALS ONE I.S. DEVICE.
7. NON-HAZARDOUS ASSOCIATED APPARATUS IS AS SHOWN AND MUST NOT BE SUPPLIED FROM OR CONTAIN, UNDER NORMAL OR ABNORMAL CONDITIONS, A SOURCE OF POTENTIAL WITH RESPECT TO EARTH IN EXCESS OF 250V RMS OR 250V dc, Um = 250V.
8. CONNECT THE BARRIER GROUND TO THE EARTH GROUND BUS AT THE POWER DISTRIBUTION PANEL WITH A 4 sq. mm (10 AWG) (OR LARGER) CONDUCTOR. GROUNDING MUST COMPLY WITH IEC 60079-0, CLAUSE 15.4.
- C4 9. THIS SYMBOL, ⊙, DENOTES A FIELD WIRING CONNECTION INSIDE A WEATHERPROOF JUNCTION BOX. EACH INTRINSICALLY SAFE DEVICE MAY USE AN OPTIONAL SURGE PROTECTOR IN PLACE OF THE WEATHERPROOF JUNCTION BOX LOCATED IN ZONE 1. SURGE PROTECTORS CONSIST OF EITHER A CERTIFIED IN-LINE DEVICE, OR ARE SIMPLE APPARATUS.
10. A RISK ANALYSIS MUST BE PERFORMED TO DETERMINE IF THE INSTALLATION LOCATION IS SUSCEPTIBLE TO LIGHTNING OR OTHER SURGES. IF NECESSARY, ADD PROTECTION AGAINST LIGHTNING AND OTHER ELECTRICAL SURGES IN ACCORDANCE WITH IEC 60079-25, SECTION 10. IF REQUIRED, INSTALL A SURGE PROTECTOR IN ZONE 1 AS CLOSE AS POSSIBLE TO THE BOUNDARY WITH ZONE 0. THE SITE PREPARATION GUIDE, MANUAL NO. 577013-578, PROVIDES ADDITIONAL DETAILS ABOUT RISK ASSESSMENT.
11. IT IS THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE COMPLIANCE OF SIMPLE APPARATUS. SIMPLE APPARATUS USED WITH THIS SYSTEM MUST CONFORM TO THE FOLLOWING REQUIREMENTS:
 - A) CONSTRUCTED OF PASSIVE COMPONENTS ONLY, FOR EXAMPLE, SWITCHES, JUNCTION BOXES AND RESISTORS.
 - B) CONSTRUCTED WITHOUT ANY SOURCES OF STORED ENERGY SUCH AS BATTERIES, CAPACITORS AND INDUCTORS.
 - C) CONSTRUCTED WITHOUT SOURCES OF GENERATED ENERGY THAT PRODUCE MORE THAN 1.5V, AND 25mW OR SOURCES THAT CONTAIN A MEANS OF INCREASING THE VOLTAGE.
 - D) IF CONSTRUCTED WITH A METALLIC HOUSING THE SIMPLE APPARATUS SHALL BE CAPABLE OF WITHSTANDING THE TEST VOLTAGE TO EARTH IN ACCORDANCE WITH IEC 60079-11, CLAUSE 6.3.12 AND ITS TERMINALS MUST CONFORM TO IEC 60079-11, CLAUSE 6.2.1.
 - E) NONMETALLIC ENCLOSURES AND ENCLOSURES OF LIGHT METALS MUST COMPLY WITH IEC 60079-0 SECTIONS 7 & 8 AND IEC 60079-26 CLAUSE 4.3.3.
 - F) BASED ON THE AVAILABLE POWER WITHIN THE SYSTEM, SIMPLE APPARATUS THAT HAVE ELECTRICAL COMPONENTS THAT EXCEED 20 sq. mm IN TOTAL SURFACE AREA, MAY BE ASSESSED AS HAVING A T4 TEMPERATURE CODE, AT THE SPECIFIED AMBIENT TEMPERATURE RANGE OF -40°C ≤ Ta ≤ +60°C. OTHER TYPES OF SIMPLE APPARATUS MUST BE ASSESSED IN ACCORDANCE WITH IEC 60079-11, SECTION 6.2.
12. CABLE GLAND MUST BE A SUITABLE PROCESS CONNECTION IN ACCORDANCE WITH IEC 60079-26.
13. SPECIAL CONDITIONS FOR SAFE USE, AS DEFINED IN THE CERTIFICATE OF CONFORMITY AND THE SITE PREPARATION GUIDE, MANUAL NO. 577013-578, MUST BE TAKEN INTO ACCOUNT.
14. THIS SYSTEM DESCRIPTIVE DOCUMENT DESCRIBES THE INTRINSICALLY SAFE EQUIPMENT AND ASSOCIATED APPARATUS THAT TOGETHER FORM AN INTRINSICALLY SAFE SYSTEM.
- C5 15. TLS-300 CONSOLES MUST BE INSTALLED IN AN INDOOR, NON-HAZARDOUS AREA IN ACCORDANCE WITH THE DESCRIPTIVE SYSTEM DOCUMENT AND THE INSTALLATION INSTRUCTIONS. ONLY ONE TLS-300 CONSOLE CAN BE CONNECTED TO ANY SINGLE INTRINSICALLY SAFE APPARATUS AS DESCRIBED ON SHEET ONE OF THIS DOCUMENT. MULTIPLE SOURCES OF POWER, ADDITIONAL TLS CONSOLES OR OTHER ASSOCIATED APPARATUS, CANNOT BE CONNECTED TO THE SAME INTRINSICALLY SAFE APPARATUS.
- C6 16. THE MAG PLUS1 SERIES PROBES MARKED Ex ia IIB T4 OR Ex ia IIC T4, WHEN USED WITHIN THIS SYSTEM THE DEVICE IS LIMITED TO GROUP IIA.

STANDARDS:

Ex ia, GROUP IIA, T4 Gα

IEC 60079-0	ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-PART 0: GENERAL REQUIREMENTS
IEC 60079-11	ELECTRICAL APPARATUS FOR POTENTIALLY EXPLOSIVE ATMOSPHERES-PART 11: INTRINSIC SAFETY "I"
IEC 60079-25	ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES-PART 25: INTRINSICALLY SAFE SYSTEMS
IEC 60079-26	ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES - PART 26: EQUIPMENT WITH EQUIPMENT PROTECTION LEVEL (EPL) Gα.

		SIMSBURY, CONNECTICUT 06070 U.S.A.	
NOTICE - THIS DOCUMENT IS THE PROPERTY OF THE VEEDER-ROOT COMPANY AND IS NOT TO BE DISCLOSED, REPRODUCED IN WHOLE OR IN PART, OR USED FOR MANUFACTURE BY ANYONE WITHOUT VEEDER-ROOT'S WRITTEN CONSENT.			
DESCRIPTIVE SYS DOCUMENT IECEX TLS-300 CONSOLES			
SIZE	DRAWING NUMBER	REV.	STATUS
D	331940-102	C	NFP
SCALE	NONE	SHEET	2 OF 2