

CLASS I, DIVISION 1, GROUP D
CLASS 1 ZONE 0, GROUP IIA

HAZARDOUS LOCATION
INTRINSICALLY SAFE (I.S.) APPARATUS

CONTROL DRAWING INTRINSICALLY SAFE SYSTEM

MAG-XL RF SYSTEM

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

REV	DESCRIPTION	BY	DATE	ECO
A	INITIAL RELEASE	CT	12/10/08	T396-001
B	VARIOUS CHANGES PER UL	CT	07/17/09	CN-00722
C	UPDATE XL TX P/N FROM 333062-XXX	JCL	10/10/14	CN-02603
D	ADDED LOCATION INFORMATION; ADDED SHEET 2	KG	04/26/12	CN-04987

DESCRIPTION

THIS CONTROL DRAWING DESCRIBES THE INTRINSICALLY SAFE EQUIPMENT THAT TOGETHER FORM AN INTRINSICALLY SAFE SYSTEM.

THE CURRENT LIMITATION LOCATED IN THE TLS-RF BATTERY PACK FORMS AN INTRINSICALLY SAFE ENERGY LIMITED SYSTEM WHEN CONNECTED TO THE XL TRANSMITTER.

XL TRANSMITTERS ARE IDENTIFIED BY PART NUMBERS 333242-XXX. A TLS-RF TRANSMITTER CANNOT BE CONNECTED IN PARALLEL WITH ANOTHER XL TRANSMITTER OR ANY OTHER APPARATUS.

THE ELECTRONICS LOCATED IN THE BARRIER CIRCUIT OF THE XL TRANSMITTER FORMS AN INTRINSICALLY SAFE ENERGY LIMITED SYSTEM. ONLY THE PROBE OR THE SENSOR INDICATED ON THIS DRAWING CAN BE CONNECTED TO THE OUTPUT TERMINALS OF THE XL TRANSMITTER IN ORDER FOR IT TO BE CONSIDERED AN INTRINSICALLY SAFE APPARATUS AND APPROVED FOR USE IN CLASS I, GROUP D HAZARDOUS (CLASSIFIED) LOCATIONS.

WARNINGS

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.



WARNING: IN INSTALLATION AND USE OF THIS PRODUCT, COMPLY WITH ALL ELECTRICAL CODES. IN ADDITION, TAKE THE NECESSARY PRECAUTIONS DURING INSTALLATION, SERVICE AND REPAIR TO PREVENT PERSONAL INJURY, PROPERTY LOSS AND EQUIPMENT DAMAGE.

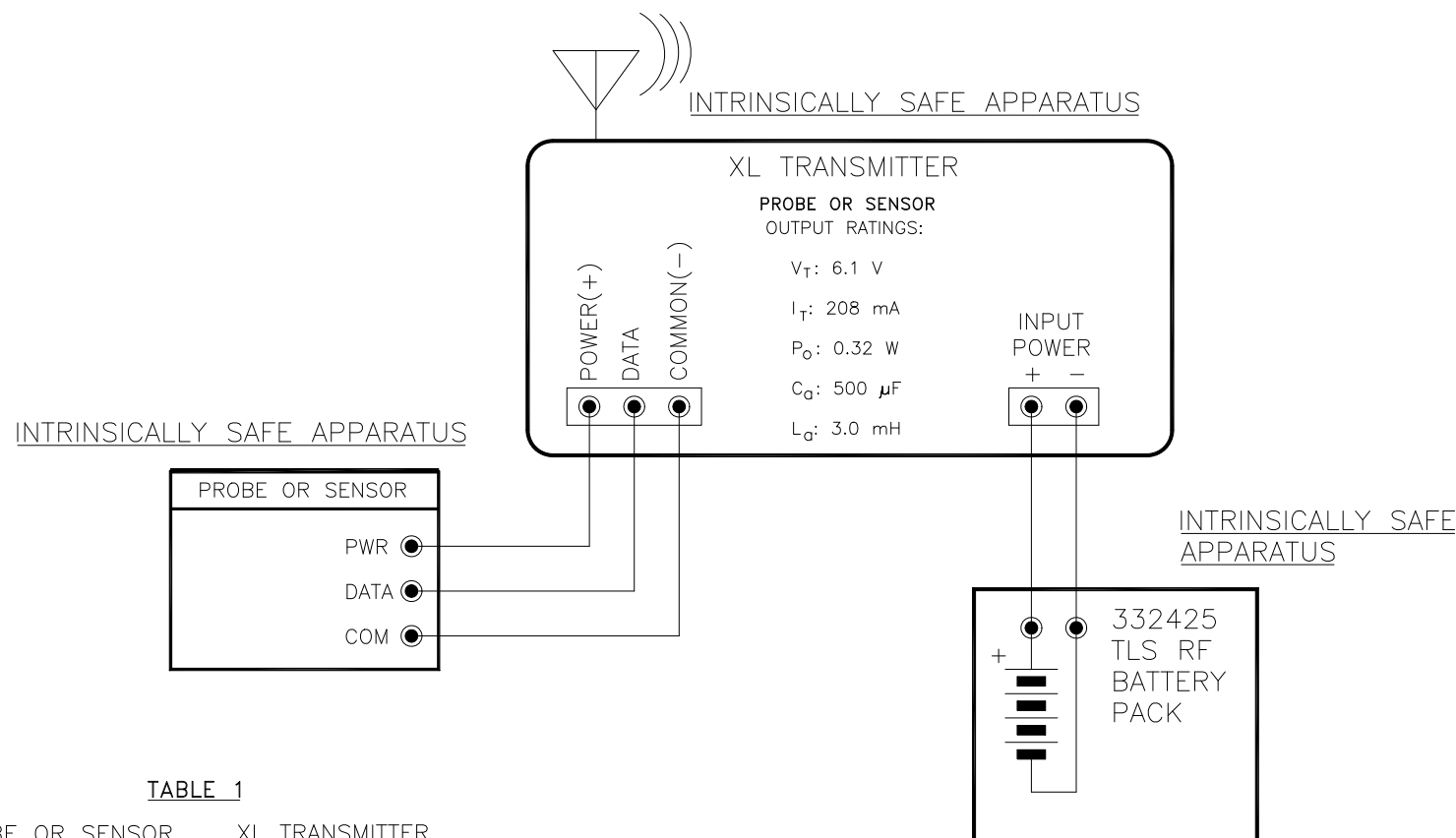


TABLE 1

PROBE OR SENSOR	XL TRANSMITTER
V_{\max} (or U_i)	$\geq V_{oc}$ or V_t (or U_o)
I_{\max} (or I_i)	$\geq I_{sc}$ or I_t (or I_o)
P_{\max} (or P_i)	$\geq P_o$
$C_i + C_{cable}$	$\leq C_a$ (or C_o)
$L_i + L_{cable}$	$\leq L_a$ (or L_o)

NOTES:

1. THE MAXIMUM CABLE LENGTH CONNECTING THE BATTERY PACK TO THE XL TRANSMITTER SHALL NOT EXCEED 45.72 METERS OR 150 FEET.
2. CAPACITANCE AND INDUCTANCE OF THE FIELD WIRING FROM THE PROBE OR SENSOR TO THE XL TRANSMITTER SHALL BE CALCULATED AND MUST BE INCLUDED IN THE SYSTEM CALCULATIONS AS SHOWN IN TABLE 1. CABLE CAPACITANCE, C_{cable} , PLUS INTRINSICALLY SAFE EQUIPMENT CAPACITANCE, C_i MUST BE LESS THAN THE MARKED CAPACITANCE, C_a (OR C_o), SHOWN ON ANY ASSOCIATED APPARATUS USED. THE SAME APPLIES FOR INDUCTANCE (L_{cable} , L_i AND L_a OR L_o , RESPECTIVELY). WHERE THE CABLE CAPACITANCE AND INDUCTANCE PER FOOT ARE NOT KNOWN, THE FOLLOWING VALUES SHALL BE USED: $C_{cable} = 60 \text{ pF/ft.}$, $L_{cable} = 0.2 \text{ } \mu\text{H/ft.}$
3. EACH CABLE (OR WIRING) USED TO CONNECT PROBE OR SENSOR TO THE XL TRANSMITTER MUST NOT EXCEED A CAPACITANCE OF 328 pf/METER OR 100 pf/FOOT.
4. THE TOTAL CABLE CAPACITANCE, COMBINING ALL OF THE CABLE USED TO CONNECT THE INTRINSICALLY SAFE DEVICE TO THE XL TRANSMITTER, MUST NOT EXCEED $0.1 \text{ } \mu\text{F}$.
5. EACH CABLE MUST NOT EXCEED AN INDUCTANCE OF $0.656 \text{ } \mu\text{H/METER}$ OR $0.2 \text{ } \mu\text{H/FOOT}$.
6. THE L/R RATIO OF THE CABLE MUST NOT EXCEED $200 \text{ } \mu\text{H/OHM}$.
7. ENTITY PARAMETERS APPLY COLLECTIVELY TO BOTH THE POWER (+) AND DATA TERMINALS WITH RESPECT TO COMMON (-).
8. THE SELECTED BARRIER SHALL BE THIRD PARTY CERTIFIED WITH INTRINSICALLY SAFE CIRCUITS FOR THE HAZARDOUS LOCATION GROUP AND ZONE AS APPROPRIATE FOR THE APPLICATION AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FOR WIRING NOTES AND LIMITATIONS,
SEE SHEET 2.

DO NOT SCALE DRAWING				
DESIGNER	NAME	DATE	NEXT GRP.	-----
C. TELLAR	C. TELLAR	08/28/08	ASSEMBLY	-----
PROJECT	B. ANDREW	08/28/08	FORM NO	-----
MATERIAL			SIMSBURY, CONNECTICUT 06070 U.S.A.	
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REFERENCE MFG. SPEC. VRS 81005 WHERE IT IS APPLICABLE	CONTROL DRAWING MAG-XL RF SYSTEM			
UNSPECIFIED TOLERANCES +/- 0.005	SIZE D	DRAWING NUMBER 331940-009	REV. D	STATUS REL
SCALE	NONE	SHEET 1	OF 1	

LIMITATIONS

THE MAXIMUM NUMBER OF A SPECIFIC DEVICE TYPE IS LIMITED TO ONE DEVICE.

WIRING NOTES

INTRINSICALLY SAFE (I.S.) WIRING MUST BE INSTALLED IN ACCORDANCE WITH ARTICLE 504-20 OF THE NEC (NATIONAL ELECTRICAL CODE), ANSI/NFPA 70 OR OTHER APPLICABLE LOCAL CODES. ALL OTHER WIRING MUST BE INSTALLED ACCORDING TO LOCAL CODES. CABLES (OR I.S. WIRING) USED TO CONNECT SEPARATE I.S. DEVICES TO OTHER ASSOCIATED APPARATUS MUST HAVE SUITABLE INSULATION AS REQUIRED BY ARTICLE 504.30(B) OF THE NEC.

THE MAG-XL SYSTEM MUST BE INSTALLED IN ACCORDANCE TO THIS CONTROL DRAWING AND ARTICLE 504 OF THE NEC OR SECTION 18 OF THE CEC.

EVALUATED IN CONJUNCTION WITH AN APPROVED AND COMPATIBLE ASSOCIATED APPARATUS ie, ASSOCIATED APPARATUS BEARS THE UL/cUL MARK AND THE SYSTEM IS INSTALLED IN ACCORDANCE WITH APPROVED INSTALLATION INSTRUCTIONS.

CLASS I, DIVISION 1, GROUP D

UL 1238 CONTROL EQUIPMENT FOR USE WITH FLAMMABLE LIQUID DISPENSING DEVICES.

UL 913 INTRINSICALLY SAFE APPARATUS

CSA C22.2 No.0 CANADIAN ELECTRICAL CODE, PART II

CSA C22.2 No.0.4M BONDING AND GROUNDING OF ELECTRICAL EQUIPMENT (PROTECTIVE GROUNDING)

CSA C22.2 No.142-M PROCESS CONTROL EQUIPMENT

CSA C22.2 No.157 INTRINSICALLY SAFE AND NONINCENDIVE EQUIPMENT FOR USE IN HAZARDOUS LOCATIONS, CONSUMER AND COMMERCIAL PRODUCTS.



SIMSBURY,
CONNECTICUT 06070
U.S.A.

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CONTROL DRAWING MAG-XL RF SYSTEM

SIZE	DRAWING NUMBER	REV.	STATUS
D	331940-009	D	REL
SCALE	NONE	SHEET	2 OF 2