CONTROL DRAWING
INTRINSICALLY SAFE SYSTEM
-40°C ≤ T1 ≤ +60°C

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 TLS-RF TRANSMITTER.

TLS-RF TRANSMITTERS ARE IDENTIFIED BY PART NUMBERS 332235-XXX. A TLS-RF TRANSMITTER CANNOT BE CONNECTED IN PARALLEL WITH ANOTHER TLS-RF TRANSMITTER OR ANY OTHER APPARATUS.

THE ELECTRONICS LOCATED IN THE BARRIER CIRCUIT OF THE TLS-RF 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 TLS-RF TRANSMITTER IN ORDER FOR IT TO BE CONSIDERED AN INTRINSICALLY SAFE APPARATUS AND APPROVED FOR USE IN CLASS I, GROUP D OR CLASS I, ZONE 0, GROUP IA 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 ENVIRONMENTAL DAMAGE.

NOTES:

1. THE MAXIMUM CABLE LENGTH CONNECTING THE BATTERY PACK TO THE TLS-RF TRANSMITTER SHALL NOT EXCEED 45.72 METERS OR 150 FEET.
2. THE TOTAL CABLE INSTRUMENT, COMBINED ALL OF THE CABLE USED TO CONNECT THE INTRINSICALLY SAFE DEVICE TO THE RF TRANSMITTER, MUST NOT EXCEED 0.2M.
3. EACH CABLE OR WIRING USED TO CONNECT TLS-APPARATUS TO THE TLS-RF TRANSMITTER MUST NOT EXCEED A CAPACITANCE OF 328 MICRO-FARAD OR 100 MICRO-H.
4. THE TOTAL CABLE INSTRUMENT, COMBINED ALL OF THE CABLE USED TO CONNECT THE INTRINSICALLY SAFE DEVICE TO THE TLS-RF TRANSMITTER, MUST NOT EXCEED A FRACTION OF 0.656 MICRO-FARAD OR 0.2 MICRO-H.
5. EACH CABLE MUST NOT EXCEED AN INDUCTANCE OF 0.656 MICRO-HENRY OR 0.2 MICRO-H.
6. THE LAY LENGTH OF THE CABLE MUST NOT EXCEED 200 MICRO-H.
7. EACH CABLE OR WIRING USED TO CONNECT THE INTRINSICALLY SAFE APPARATUS MUST HAVE SUITABLE ISOLATION AS REQUIRED BY ARTICLE 501-70(B)(6) OF THE NEC.
**WIRING NOTES**

- ULTRA SAFE (ULS) WIRING MUST BE INSTALLED IN ACCORDANCE WITH ARTICLE 501-20 OF THE NEC (NATIONAL ELECTRICAL CODE), AND NFPA 70 OR OTHER APPLICABLE LOCAL CODES. ALL OTHER WIRING MUST BE INSTALLED ACCORDING TO LOCAL CODES.
- UL-1569, USED TO CONNECT THE RADIATE TO THE PRIMARY TRANSFORMER OF THE SYSTEM, MUST HAVE THE APPROPRIATE INSULATION AS REQUIRED BY ARTICLE 504.50(A) OF THE NEC.

- THE TLS-RF SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH THE CONTROL Wiring AND ARTICLE 30 OF THE NEC OR SECTION 18 OF THE NEC.

**LIMITATIONS**

- THE MAXIMUM NUMBER OF A SPECIFIC DEVICE TYPE IS LIMITED TO ONE DECO/ph.
- MAGNETOSTRICTIVE PROBE—ENCLOSURE CONTAINS ALUMINUM. CARE MUST BE TAKEN TO AVOID IGNITION HAZARD DUE TO IMPACT OR FRICTION.
- VAPOR FLOW METER, PART NUMBERS 331847-001 AND 332374-001 ARE ONLY SUITABLE FOR USE INSIDE THE BASE OF A FLAMMABLE LIQUID DISPENSER WHEN FACTORY INSTALLED BY THE RESPECTIVE ORIGINAL EQUIPMENT MANUFACTURER.
- VAPOR FLOW METERS PART NUMBERS 331847-002 AND 332374-002 ARE SUITABLE FOR IN-THE-FIELD INSTALLATIONS, WHEN MOUNTED INSIDE FLAMMABLE LIQUID DISPENSER THAT ARE EVALUATED AS A PART OF A LISTED Retrofit Kit.
- VAPOR PRESSURE SENSORS, PART NUMBERS 861190-001, 861190-002 AND 861190-003 ARE SUITABLE FOR USE INSIDE THE BASE OF A FLAMMABLE LIQUID DISPENSER WHEN INSTALLED BY THE RESPECTIVE ORIGINAL EQUIPMENT MANUFACTURERS. VAPOR PRESSURE SENSORS, PART NUMBERS 861190-001, 861190-002 AND 861190-003 ARE ALSO SUITABLE FOR USE WHEN MOUNTED TO THE VAPOR VENT STACK THAT IS USED FOR VENTING FLAMMABLE VAPORS.
- VAPOR PRESSURE SENSORS, PART NUMBERS 861190-001, 861190-002 AND 861190-003 ARE SUITABLE FOR IN-THE-FIELD INSTALLATIONS, WHEN MOUNTED INSIDE FLAMMABLE LIQUID DISPENSER THAT ARE EVALUATED AS A PART OF A LISTED Retrofit Kit.

**SURGE PROTECTION**

- SURGE PROTECTION COMPONENTS MUST BE GAS-TUBE TYPE, UL RECOGNIZED, CATEGORY II DEVICES. INSTALL UL-LABELLED WITH AN IMPEDANCE OF AT LEAST 1004 9/2000 OHM WHEN INSTALLED AT THE TANK ENTRY.
- INSTALL THE SURGE PROTECTOR IN ACCORDANCE WITH NFPA 780, CLAUSE 4.18.3.2.
- Consult the local authority having jurisdiction prior to installing any surge protection device. Some installations may require a 6 foot spacing between surge protector and the tank access point or vent reference NFPA 30.
- THE SURGE PROTECTION DEVICE MUST BE A SINGLE AFFILIATION ONLY (NFPA 70, CLAUSE 504.2) SUITABLE TO THE AUTHORITY HAVING JURISDICTION.