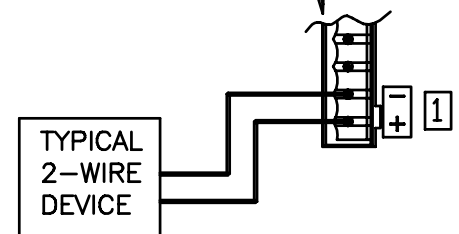
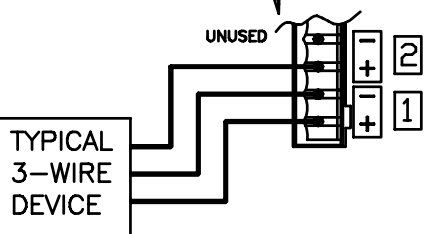
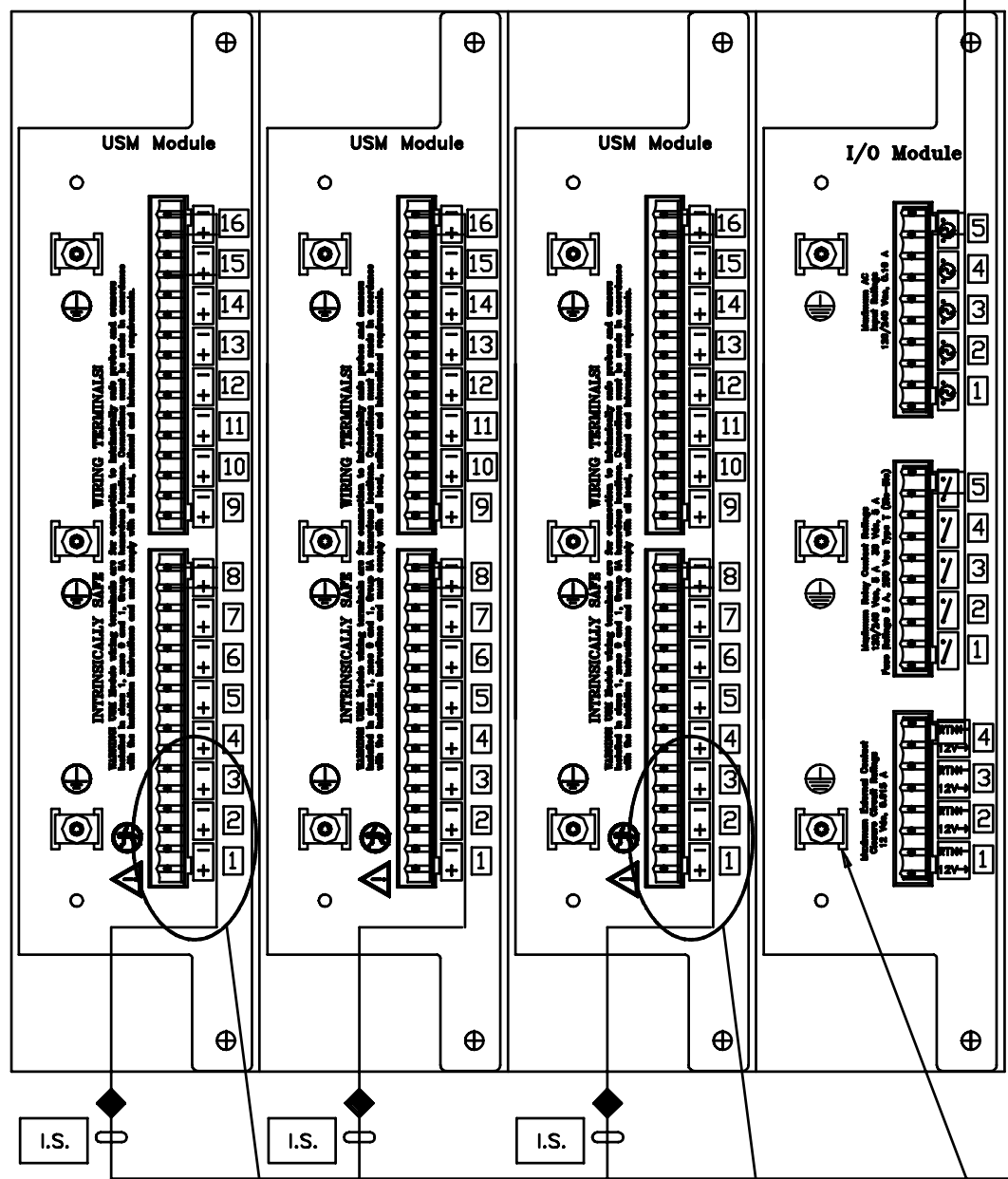


CONTROL DRAWING INTRINSICALLY SAFE SYSTEM

NON-HAZARDOUS LOCATION

ASSOCIATED APPARATUS

TLS-450 CONSOLE



TERMINATION POINTS FOR SHIELDED CABLE

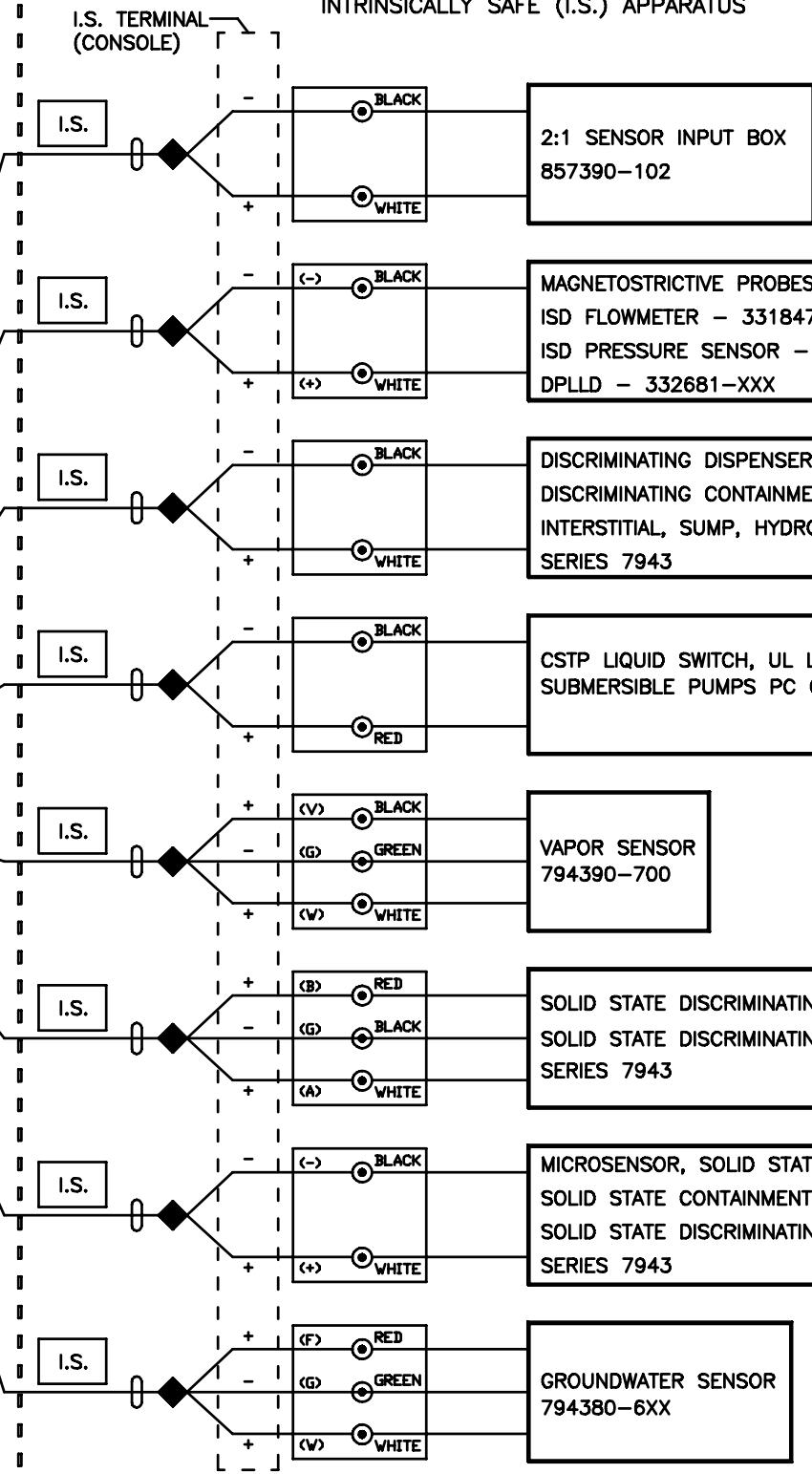
UNSPECIFIED EQUIPMENT
SEE SHEET 2

AC NEUTRAL
CHASSIS GROUND
AC LINE

UNSPECIFIED RECEIVER
TLS RF CONSOLE
OPTICALLY ISOLATED
INTRINSICALLY
SAFE CIRCUITS

CLASS I, DIVISION 1, GROUP D

HAZARDOUS LOCATION
INTRINSICALLY SAFE (I.S.) APPARATUS



REV	DESCRIPTION	BY	DATE	ECO
A	INITIAL RELEASE	CAR	06/22/07	T374-095

LEGEND	
⊙	- DENOTES A FIELD WIRING CONNECTION INSIDE A WEATHERPROOF JUNCTION BOX
◆	- DENOTES A CONDUIT SEAL-OFF
⌋	- DENOTES RIGID CONDUIT
I.S.	- DENOTES INTRINSICALLY SAFE WIRING

DO NOT SCALE DRAWING				
DESIGNER	NAME	DATE	NEXT GRP.	
C.ROUTHIER	C.ROUTHIER	5/11/07	ASSEMBLY	
B.ANDREW	B.ANDREW	5/11/07	FORM NO	
MATERIAL		SIMSBURY, CONNECTICUT 06070 U.S.A.		
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REFERENCE MFG. SPEC. VRS 81005 WHERE IT IS APPLICABLE		CONTROL DRAWING TLS-450 CONSOLES		
UNSPECIFIED TOLERANCES +/-	N/A	SIZE	DRAWING NUMBER	REV. STATUS
		D	331940-008	A REL
SCALE	NONE	SHEET 1 OF 2		

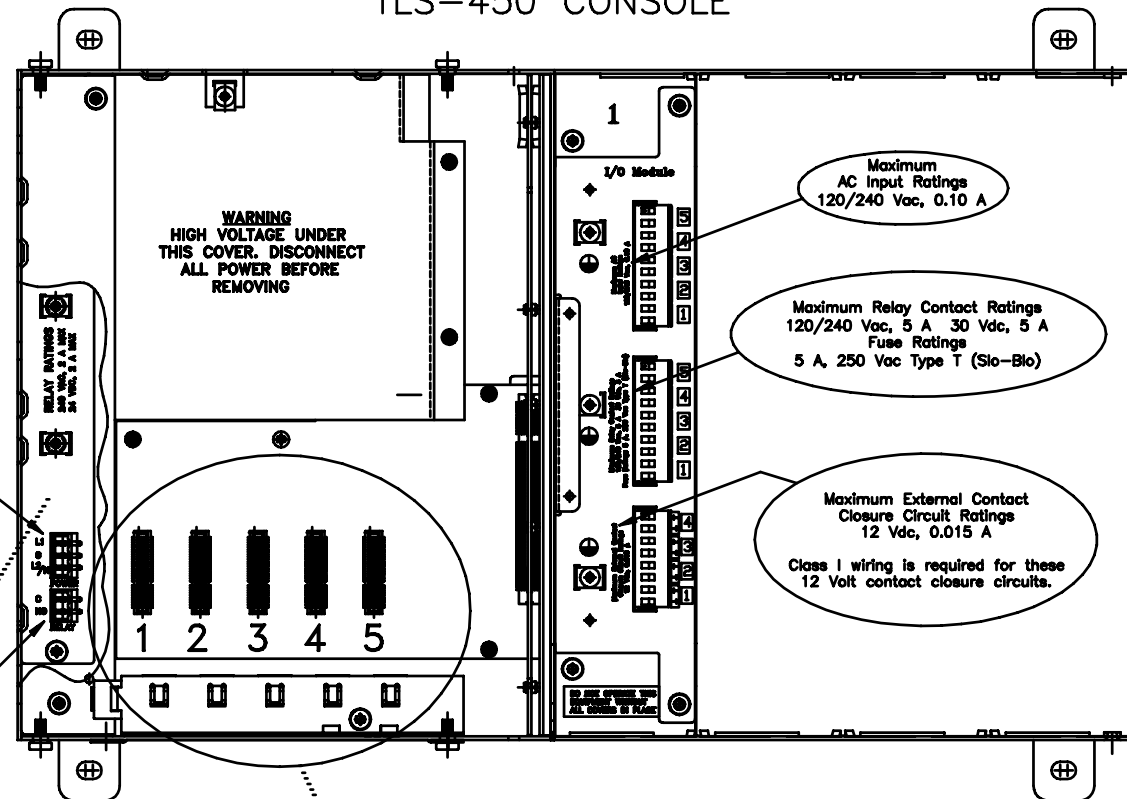
FOR WIRING NOTES
SEE SHEET 2 OF 2

DESCRIPTION

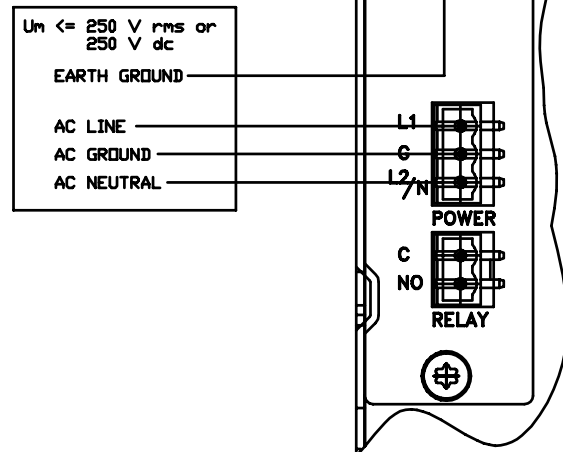
THIS CONTROL DRAWING DESCRIBES THE INTRINSICALLY SAFE EQUIPMENT AND ASSOCIATED APPARATUS THAT TOGETHER FORM AN INTRINSICALLY SAFE SYSTEM.

TLS-450 CONSOLES ARE IDENTIFIED BY FORM NUMBERS 8600. A TLS-450 CONSOLE CANNOT BE CONNECTED IN PARALLEL WITH ANOTHER TLS-450 OR ANY OTHER ASSOCIATED APPARATUS. TLS-450 CONSOLES AND OPTIONAL EXPANSION BOXES MUST BE INSTALLED IN INDOOR NON-HAZARDOUS AREAS.

TLS-450 CONSOLE



CIRCUIT BREAKER PANEL



COMM MODULES	PERMISSIBLE SLOT(S)
MODEM MODULE	1, 2 OR 3
USB MODULE	5 ONLY
USB/ETHERNET MODULE	5 ONLY
ETHERNET MODULE	4 OR 5
SINGLE SERIAL PORT MODULE	1, 2 OR 3
DUAL SERIAL PORT MODULE	1, 2 OR 3
DIM MODULE	4 ONLY

NOTE: Limited single port capability in slot 3.

INSIDE THE MODULE AREA OF BOTH THE TLS-450 CONSOLE AND THE EXPANSION BOX, ANY COMBINATION OF UP TO FOUR MODULES MAY BE INSTALLED. I/O MODULES PROVIDE WIRING TERMINALS FOR THE CONNECTION OF EQUIPMENT INSTALLED IN NON-HAZARDOUS LOCATIONS. THE USM (UNIVERSAL SENSOR MODULE) PROVIDES WIRING TERMINALS FOR THE CONNECTION OF INTRINSICALLY SAFE APPARATUS.

THE ELECTRONICS LOCATED IN THE BARRIER CIRCUIT OF THE USM MODULE FORMS AN INTRINSICALLY SAFE ENERGY LIMITED SYSTEM. PROBE AND SENSORS CONNECTED TO THE OUTPUT TERMINALS OF THE USM MODULE ARE CONSIDERED INTRINSICALLY SAFE APPARATUS AND ARE APPROVED FOR USE IN CLASS I, GROUP D HAZARDOUS (CLASSIFIED) LOCATIONS.

WARNINGS

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

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.

THE MAXIMUM CABLE LENGTH ALLOWED, USED TO CONNECT ANY INTRINSICALLY SAFE DEVICE TO THE TLS-450 CONSOLE IS LIMITED TO A TOTAL OF 24,000 FEET PER USM (UNIVERSAL SENSOR MODULE).

EACH CABLE (OR I.S. WIRING), USED TO CONNECT INTRINSICALLY SAFE DEVICES TO THE TLS-450 CONSOLE, MUST BE RATED 100 PF/FOOT (OR LESS CAPACITANCE PER FOOT) AND MUST BE RATED 0.2 μH/FOOT (OR LESS INDUCTANCE PER FOOT).

I.S. GROUNDING POINTS MUST BE CONNECTED TO A SUITABLE GROUND ELECTRODE THROUGH LESS THAN ONE OHM DC RESISTANCE TO THE EARTH GROUND BUS AT THE DISTRIBUTION PANEL IN ACCORDANCE WITH THE NEC/CEC OR OTHER LOCAL CODES.

CABLES (OR I.S. WIRING) USED TO CONNECT SEPARATE I.S. DEVICES TO THE ASSOCIATED APPARATUS MUST HAVE SUITABLE INSULATION AS REQUIRED BY ARTICLE 504.30(B) OF THE NEC.

ASSOCIATED APPARATUS MUST BE INSTALLED IN ACCORDANCE TO THIS CONTROL DRAWING AND ARTICLE 504 OF THE NEC OR SECTION 18 OF THE CEC.

THE MAXIMUM SAFE AREA VOLTAGE (Um) OF THIS EQUIPMENT IS 250V RMS OR DC. PERIPHERAL EQUIPMENT CONNECTED TO THE TLS-450 CONSOLE MUST NOT USE OR GENERATE MORE THAN 250V RMS OR DC WITH RESPECT TO EARTH GROUND.

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

WARNING: DISCONNECT ALL POWER BEFORE MAKING ANY CONNECTIONS TO PREVENT DEATH, SERIOUS INJURY, EXPLOSION, OR ELECTRICAL SHOCK. CONSOLE MUST NEVER BE OPERATED UNLESS THE FRONT COVER IS CLOSED OVER THE BARRIER TERMINALS IN THE INTRINSICALLY SAFE AREA.

		SIMSBURY, CONNECTICUT 06070 U.S.A.	
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CONTROL DRAWING TLS-450 CONSOLES			
SIZE	DRAWING NUMBER	REV.	STATUS
D	331940-008	A	REL
SCALE	NONE	SHEET	2 OF 2