

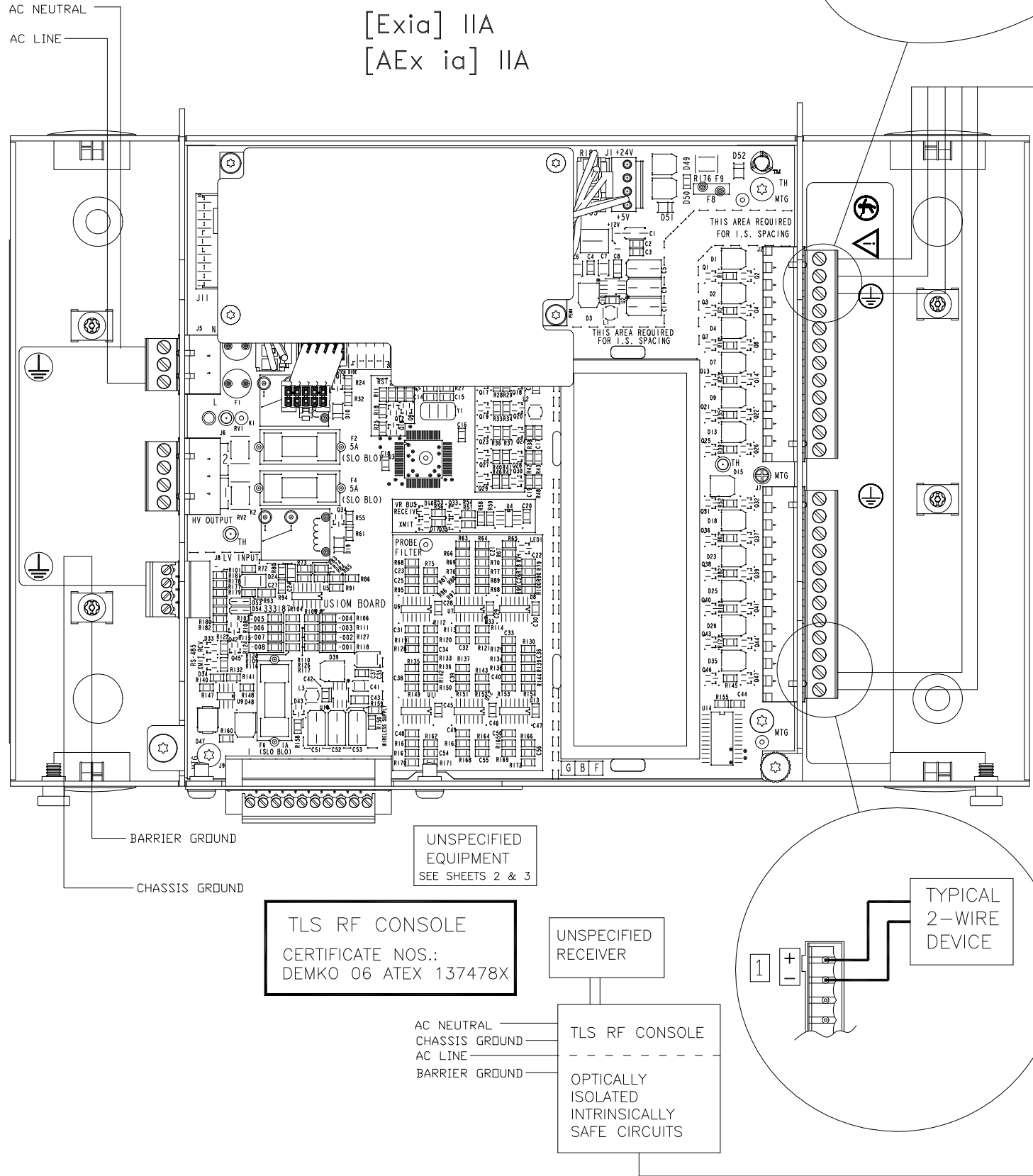
CONTROL DRAWING
INTRINSICALLY SAFE SYSTEM

0°C≤Ta≤+50°C

NON-HAZARDOUS AREA
ASSOCIATED APPARATUS

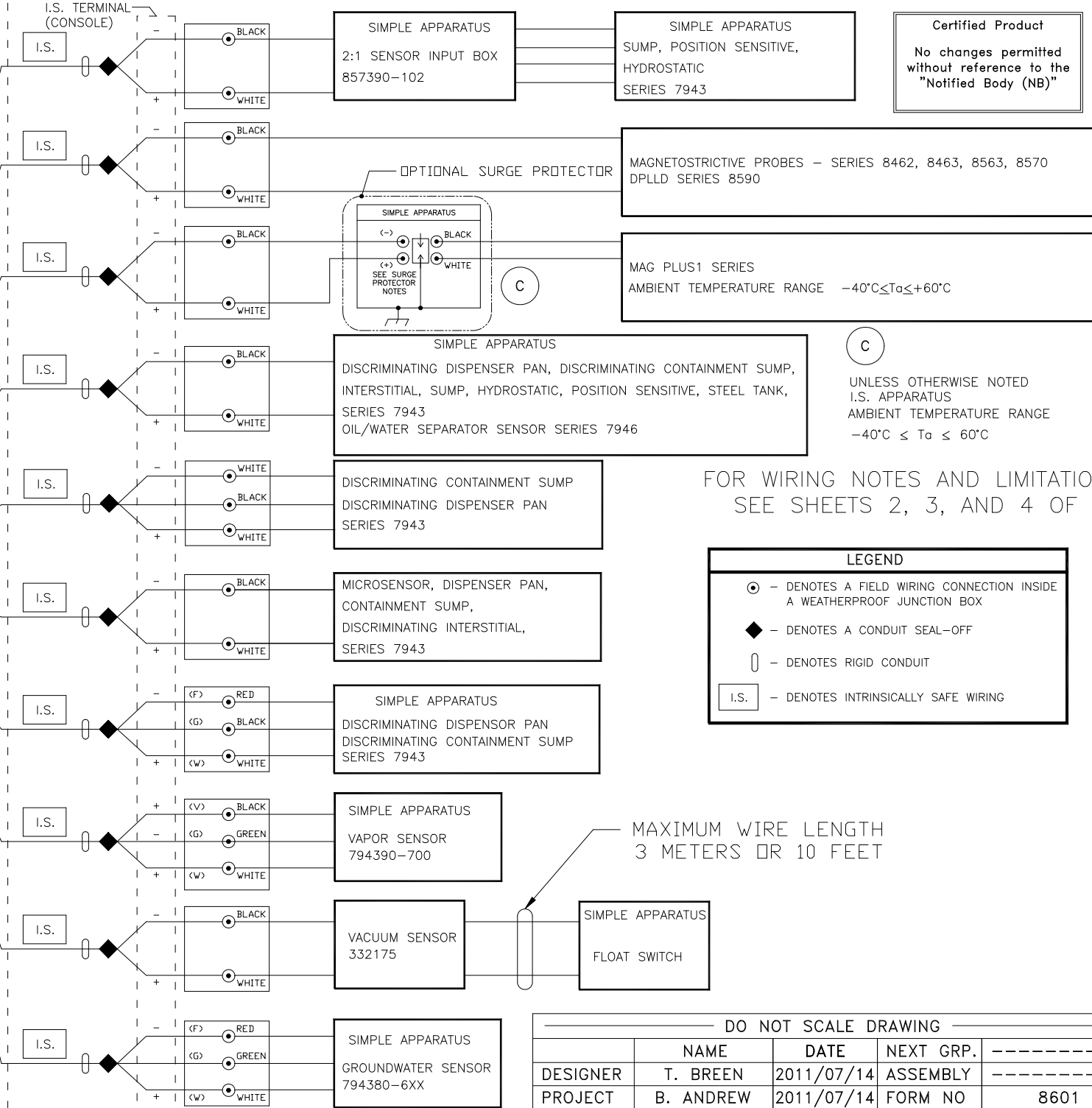
SEE SHEET 3 OF 4
FOR DC-INPUT VERSION

8601 CONSOLE
[Exia] IIA
[AEx ia] IIA



CLASS I, DIVISION 1, GROUP D
CLASS I, ZONE 0
HAZARDOUS LOCATION
INTRINSICALLY SAFE (I.S.) APPARATUS
AEx ia IIA, T4
Ex ia IIA


REV	DESCRIPTION	BY	DATE	ECO
B	1) ADDED MAG PLUS1 SERIES 2) ADDED UNLESS OTHERWISE NOTED	TKR	09/12/12	CN-05364
C	ADDED SURGE PROTECTOR TO MAG PROBE AND SURGE PROTECTION NOTES MAG PLUS1 TEMP RANGE WAS -20°C	TB	2013/03/05	CN-06112



FOR WIRING NOTES AND LIMITATIONS
SEE SHEETS 2, 3, AND 4 OF 4

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

MAXIMUM WIRE LENGTH
3 METERS OR 10 FEET

DO NOT SCALE DRAWING					
	NAME	DATE	NEXT GRP.	-----	
DESIGNER	T. BREEN	2011/07/14	ASSEMBLY	-----	
PROJECT	B. ANDREW	2011/07/14	FORM NO	8601	
MATERIAL	 VEEDER-ROOT TM			SIMSBURY, CONNECTICUT 06070 U.S.A.	

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REFERENCE MFG. SPEC. VRS 81005 WHERE IT IS APPLICABLE	CONTROL DRAWING UL/cUL 8601				
	SIZE	DRAWING NUMBER		REV.	STATUS
UNSPECIFIED TOLERANCES +/- 0.005	D	331940-018		C	REL
SCALE		NONE		SHEET	1 OF 4

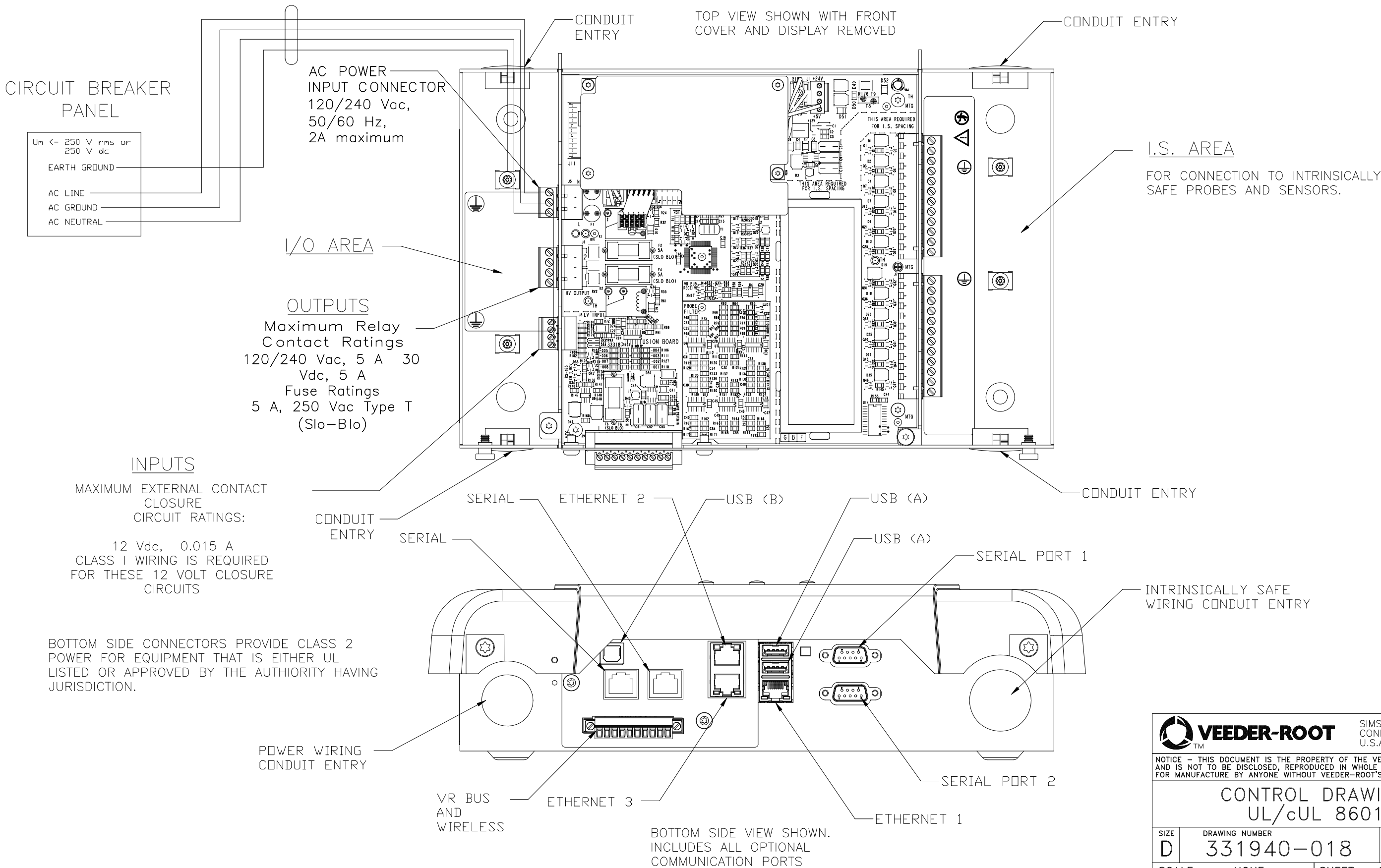
WIRING DESCRIPTION

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

8601 CONSOLES ARE IDENTIFIED BY FORM NUMBER SERIES 8601. A 8601 CONSOLE CANNOT BE CONNECTED IN PARALLEL WITH ANOTHER 8601 OR ANY OTHER ASSOCIATED APPARATUS. 8601 CONSOLES MUST BE INSTALLED IN INDOOR NON-HAZARDOUS AREAS.

8601 CONSOLE
AC-INPUT VERSION

TOP VIEW SHOWN WITH FRONT
COVER AND DISPLAY REMOVED



SIMSBURY,
CONNECTICUT 06070
U.S.A.

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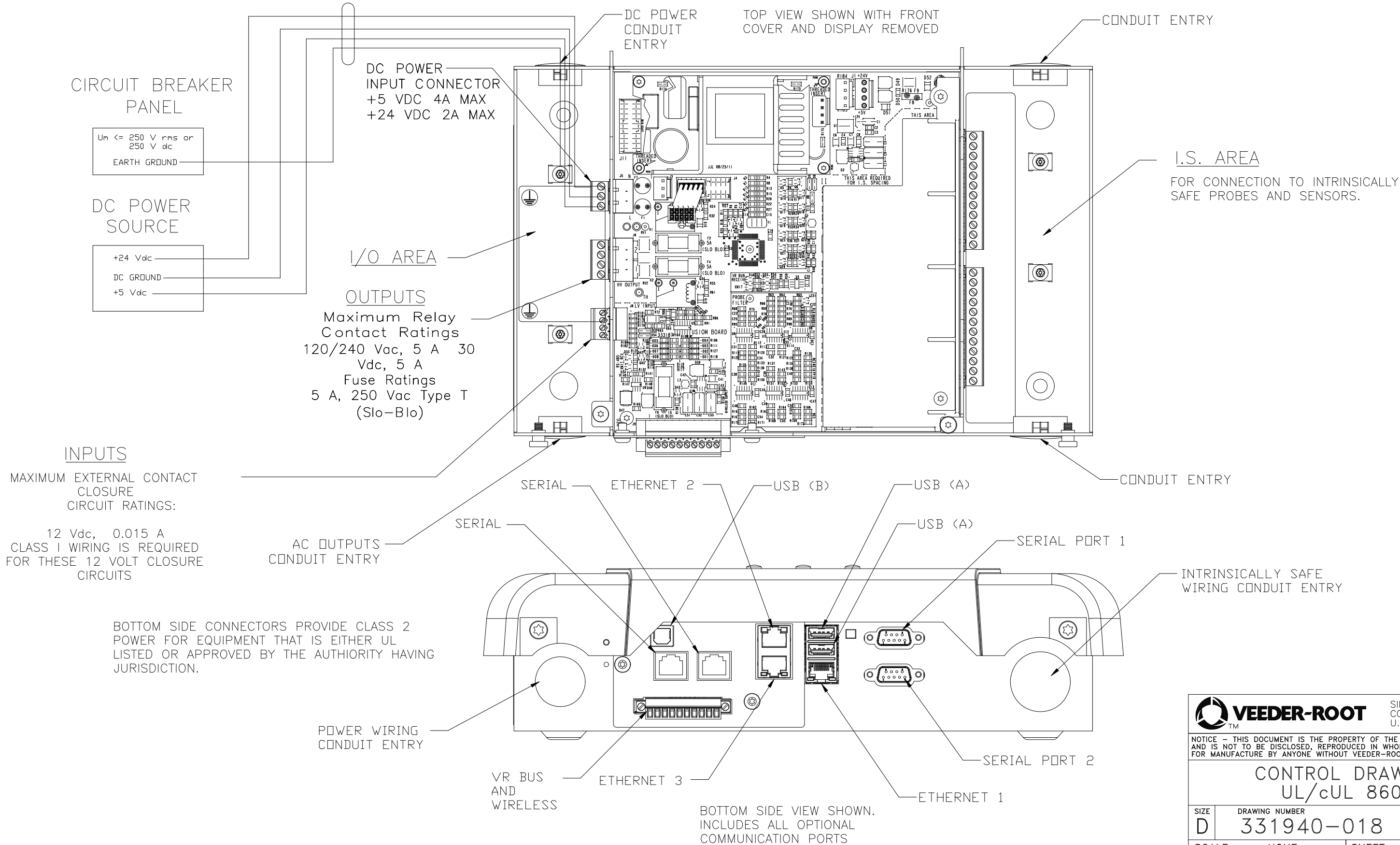
CONTROL DRAWING
UL/cUL 8601

SIZE D	DRAWING NUMBER 331940-018	REV. C	STATUS RELEASED
SCALE	NONE	SHEET 2	OF 4

WIRING DESCRIPTION

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CONTROL DRAWING UL/cUL 8601

SIZE	DRAWING NUMBER	REV.	STATUS
D	331940-018	C	REL
SCALE	NONE	SHEET	3 OF 4

WARNINGS

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.

IT IS INTENDED THAT THE 8601 CONSOLE IS CONTINUOUSLY POWERED.

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 8601 CONSOLE IS LIMITED TO A TOTAL OF 24,000 FEET.

EACH CABLE (OR I.S. WIRING), USED TO CONNECT INTRINSICALLY SAFE DEVICES TO THE 8601 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 ELCTRODE 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 8601 CONSOLE MUST NOT USE OR GENERATE MORE THAN 250V RMS OR DC WITH RESPECT TO EARTH GROUND.

INSIDE THE I/O AREA OF THE 8601 CONSOLE ARE WIRING TERMINALS FOR THE CONNECTION OF EQUIPMENT INSTALLED IN NON–HAZARDOUS LOCATIONS.

THE ELECTRONICS LOCATED IN THE BARRIER CIRCUIT OF THE I.S. AREA FORMS AN INTRINSICALLY SAFE ENERGY LIMITED SYSTEM. PROBE AND SENSORS CONNECTED TO THE OUTPUT TERMINALS OF THE I.S. AREA ARE CONSIDERED INTRINSICALLY SAFE APPARATUS AND ARE APPROVED FOR USE IN CLASS I, DIV 1, GROUP D OR CLASS I ZONE 0 HAZARDOUS (CLASSIFIED) LOCATIONS.

SURGE PROTECTION

C

SURGE PROTECTION COMPONENTS MUST BE GAS TUBE TYPE, UL RECOGNIZED, CATEGORY CODE VZC42, PER UL 1449 AND WITH AN I_{max} RATING OF AT LEAST 10kA 8/20µs OR GREATER WHEN INSTALLED AT THE TANK ENTRY.

CONNECT 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 DEVICES. SOME INSTALLATIONS MAY REQUIRE A 5 FOOT SPACING DISTANCE BETWEEN SURGE PROTECTOR AND ANY TANK ACCESS POINT OR VENT. REFERENCE NFPA 30.

THE SURGE PROTECTION DEVICE MUST BE A SIMPLE APPARATUS ONLY (NFPA 70, CLAUSE 504.2) SUITABLE TO THE AUTHORITY HAVING JURISDICTION.



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.

AEx ia, GROUP IIA T4:

UL 60079–0, ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES – PART 0: GENERAL REQUIREMENTS

UL 60079–11, EXPLOSIVE ATMOSPHERES – PART 11: EQUIPMENT PROTECTION BY INTRINSIC SAFETY "I"

CLASS I, ZONE 0 IIA

Ex ia, GROUP IIA T4:

CSA C22.2 # 60079–0, ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES – PART 0: GENERAL REQUIREMENTS

CSA C22.2 # 60079–11, EXPLOSIVE ATMOSPHERES – PART 11: EQUIPMENT PROTECTION BY INTRINSIC SAFETY "I"

OR ALTERNATIVELY 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.

		VEEDER-ROOT TM		SIMSBURY, CONNECTICUT 06070 U.S.A.	
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CONTROL DRAWING UL/cUL 8601					
SIZE D	DRAWING NUMBER 331940–018			REV. C	STATUS REL
SCALE NONE		SHEET 4		OF 4	