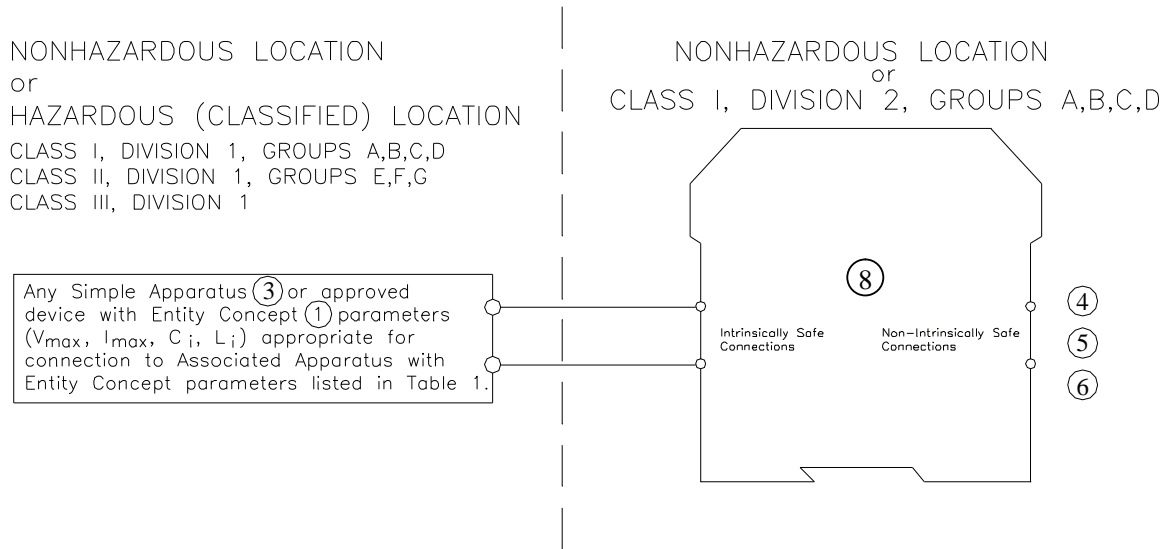


# Control Drawing / Installation Instructions



Notes:

- The Entity Concept allows interconnection of intrinsically safe apparatus with associated apparatus not specifically examined in combination as a system when the approved values of  $V_{oc}$  (or  $V_t$ ),  $I_{sc}$  (or  $I_t$ ) and  $P_o$  (or  $P_t$ ) for the associated apparatus are less than or equal to  $V_{max}$  and  $I_{max}$  for the intrinsically safe apparatus and the approved values of  $C_a$  and  $L_a$  for the associated apparatus are greater than  $C_i + C_{cable}$  and  $L_i + L_{cable}$ , respectively, for the intrinsically safe apparatus.  
Note: For installations in which both the  $C_i$  and  $L_i$  of the intrinsically safe apparatus exceed 1% of the  $C_a$  and  $L_a$  parameters of the associated apparatus (excluding the cable), only 50% of  $C_a$  and  $L_a$  parameters are applicable and shall not be exceeded.
- Capacitance and inductance of the field wiring from the intrinsically safe equipment to the associated apparatus shall be calculated and must be included in the system calculations as shown in Note 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:  $C_{cable} = 60 \text{ pF/ft.}$ ,  $L_{cable} = 0.2 \text{ } \mu\text{H/ft.}$
- Simple Apparatus: An electrical component or combination of components of simple construction with well defined electrical parameters that does not generate more than 1.5 volts, 100 milliamps, and 25 milliwatts, or a passive component that does not dissipate more than 1.3 watts and is compatible with the intrinsic safety of the circuit in which it is used (USA). A switch non-inductive resistive device or thermocouple (Canada).
- Wiring methods must be in accordance with the electrical code of the country in use.
- Power, inputs and outputs must be in accordance with Class I, Division 2 wiring methods of National Electrical Code ANSI/NFPA 70, Canadian Electrical Code C22.1 or in accordance with the authority having jurisdiction.
- Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 or other local codes, as applicable.

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7. Barriers shall not be connected to any device which uses or generates internally any voltage in excess of 250V Rms or DC unless the device has been determined to adequately isolate the voltage from the barrier.
8. These barriers are rated "Nonincendive". If the barriers are intended to be mounted in a Division 2 location, they must be installed in an enclosure meeting the requirements of ANSI/ISA-12.12.01-2007, C22.2 NO. 213-M1987. The enclosure may be installed in a Class I, Division 2, Group A, B, C, or D hazardous location. A temperature rating of T4 applies to all nonincendive rated barriers.
9. Connection of barriers to ground is not required.
10. **WARNING – EXPLOSION HAZARD –** Substitution of components may impair suitability for Class I, Division. 2.  
**AVERTISSEMENT - RISQUE D'EXPLOSION –** La substitution de composants peut compromettre l'adéquation à une utilisation en Classe I, Division 2.

**WARNING – EXPLOSION HAZARD –** Do not disconnect the equipment when it is energized and an explosive atmosphere is present.

**AVERTISSEMENT - RISQUE D'EXPLOSION –** Ne débranchez pas l'appareil si sous tension et en présence d'une atmosphère explosive.

**WARNING – EXPLOSION HAZARD –** Do not use programming plug when an explosive atmosphere is present.

**AVERTISSEMENT - RISQUE D'EXPLOSION –** N'utilisez pas le connecteur de programmation en présence d'une atmosphère explosive.

**TABLE 1 – ENTITY PARAMETERS**

MODEL NUMBER	TERMINALS	Voc (V)	Isc (mA)	Po (mW)	Vt (V)	It (mA)	Pt (mW)	Groups Ca (µF)			Groups La(mH)		
								A,B	C,E	D,F,G	A,B	C,E	D,F,G
KFD2-UT2-EX1-*(#=1 or blank)	1,2,3,4	9	22	50				4.9	40	500	68	275	550
KFD2-UT2-EX2-*(#=1 or blank)	1,2,3 (4,5,6)	9	22	50				4.9	40	500	68	275	550

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