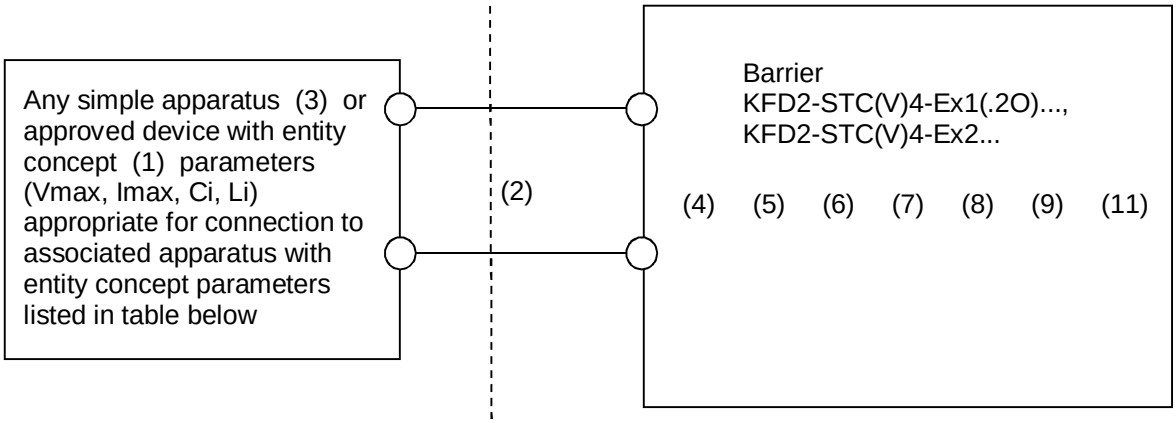
Connections

NON-HAZARDOUS LOCATION or
HAZARDOUS LOCATION
Class I, Division 1, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class III, Division 1

NON-HAZARDOUS LOCATION or
HAZARDOUS LOCATION
Class I, Division 2, Groups A, B, C, D



Notes

1. 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 Voc (or Uo) and Isc (or Io) and Po for the associated apparatus are less than or equal to Vmax (Ui) and Imax(Ii) for the intrinsically safe apparatus and the approved values of Ca(Co) and La(Lo) for the associated apparatus are greater than Ci + Ccable and Li + Lcable, respectively, for the intrinsically safe apparatus,

2. 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, Ccable, plus intrinsically safe equipment capacitance, Ci must be less than the marked capacitance, Ca (or Co), shown on any associated apparatus used. The same applies for inductance (Lcable, Li and La or Lo, respectively). Where the cable capacitance and inductance per foot are not known, the following values shall be used: Ccable = 60 pF/ft., Lcable = 0.2 µH/ft.

3. 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 V, 100 mA, 25 mW, or is a passive component that does not dissipate more than 1.3 W and is compatible with the intrinsic safety of the circuit in which it is used.

4. Wiring methods must be in accordance with all applicable installation requirements of the county in use.

5. 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.

6. Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 or other local codes, as applicable.

7. Equipment must be connected to a power supply where the primary and secondary windings of the supply transformer must not be connected to each other.

8. The Barrier 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.

9. The barrier is rated “Nonincendive”. If the barrier is intended to be mounted in a Division 2 location, it must be installed in an enclosure meeting the requirements of ANSI/ISA-12.12.2013, C22.2 NO. 213-M1987. The enclosure may be installed in a Class I, Division 2, Group A, B, C, or D hazardous location. If the barrier is intended to be mounted in a Zone 2 location, it must be installed in an enclosure meeting the requirements of UL 60079-15, CAN/CSA 60079-15. The enclosure may be installed in a Class I, Zone 2, Group IIC hazardous location. See also Note 10.

10. For both Class I, Division 2, Group A, B, C, D or Class 1, Zone 2, Group IIC hazardous locations, the enclosure must be an AEx certified or Ex certified for Canada with a minimum ingress protection of IP54 and in a controlled pollution degree 2 environment. A temperature rating of T4 applies to all nonincendive rated barriers. For non-hazardous

locations, the enclosure must be AEx certified or Ex certified with a minimum ingress protection of IP54 or in a controlled pollution degree 2 environment. The IP54 enclosure must meet the requirements of UL/CSA 60529 and UL/CSA 60079-0.

11. In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1), as applicable. See also Note 10.

12. In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70) or Canadian Electrical Code (C22.1), as applicable. See also Note 10.

13. Connection of the barrier to ground is not required.

14. For Zone 2 installations, ensure protection of supply terminals against transient voltages exceeding 140% of the rated supply voltage.

Entity Parameters

Model Number	Terminals	Uo (V)	Io (mA)	Po (mW)	Co (uF)			Lo (mH)		
					A,B (IIC)	C,E (IIB)	D,F,G (IIA)	A,B (IIC)	C,E (IIB)	D,F,G (IIA)
KFD2-STC4-Ex1* (* = blank, .2O, .2O-Y followed by up to 6 numbers or –Y followed by up to 6 numbers)	1, 3	25.4	86.8	551	0.093	0.798	2.808	4.6	18	36
		Ci = 12nF								
	3, 2/5	3.5	74	64	99.9	99.9	99.9	6.4	25	50
		Ui = 30V	Ii = 115mA	n.a.						
	1, 2/5, 3	25.4	115	584	0.093	0.798	2.808	2.7	11	22
		Ci = 12nF								
	6, 5/2	8.7	0	0	5.9	5.9	5.9	n.a.	n.a.	n.a.
		Ui = 30V	Ii = 115mA	n.a.						
KFD2-STC4-Ex1.H	1, 3	27.2	93	632	0.077	0.678	2.288	4.1	16.4	32.8
		Ci = 12nF								
	3, 2/5	3.5	73	64	100	100	100	6.4	25	50
		Ui = 30V	Ii = 117mA	n.a.						
	1, 2/5, 3	27.2	117	639	0.077	0.678	2.288	2.2	10	20
		Ci = 12nF								
	6, 5/2	8.7	0	0	5.9	5.9	5.9	n.a.	n.a.	n.a.
		Ui = 30V	Ii = 117mA	n.a.						

Continued….

Model Number	Terminals	Uo (V)	Io (mA)	Po (mW)	Co (uF)			Lo (mH)		
					A,B (IIC)	C,E (IIB)	D,F,G (IIA)	A,B (IIC)	C,E (IIB)	D,F,G (IIA)
KFD2-STC4-Ex1.2O.H	1, 3	27.2	93	632	0.077	0.678	2.288	4.1	16.4	32.8
		Ci = 12nF								
	3, 2/5	3.5	73	64	100	100	100	6.4	25	50
		Ui = 30V	Ii = 117mA	n.a.						
	1, 2/5, 3	27.2	117	639	0.077	0.678	2.288	2.2	10	20
		Ci = 12nF								
	6, 5/2	8.7	0	0	5.9	5.9	5.9	n.a.	n.a.	n.a.
		Ui = 30V	Ii = 117mA	n.a.						
KFD2-STV4-Ex1* (* = A combination of numbers and letters)	1, 3	25.4	86.8	551	0.093	0.798	2.808	4.6	18	36
		Ci = 12nF								
	3, 2/5	3.5	74	64	99.9	99.9	99.9	6.4	25	50
		Ui = 30V	Ii = 115mA	n.a.						
	1, 2/5, 3	25.4	115	584	0.093	0.798	2.808	2.7	11	22
		Ci = 12nF								
	6, 5/2	8.7	0	0	5.9	5.9	5.9	n.a.	n.a.	n.a.
		Ui = 30V	Ii = 115mA	n.a.						
KFD2-STC4-Ex2* (* = blank or -Y followed by up to 6 numbers	1, 3	25.2	93	586	0.095	0.808	2.888	4.2	17	33
		Ci = 12nF								
	4, 6	25.2	93	586	0.095	0.808	2.888	4.2	17	33
		Ci = 12nF								
KFD2-STV4-Ex2* (* = A combination of numbers and letters)	1, 3	25.2	93	586	0.095	0.808	2.888	4.2	17	33
		Ci = 12nF								
	4, 6	25.2	93	586	0.095	0.808	2.888	4.2	17	33
		Ci = 12nF								

The values of Lo and Co listed in the table above are allowed if one of the following conditions is met:

- the total Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- the total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

The values of Lo and Co listed in the table above shall be reduced to 50% when both of the following conditions are met:

- the total Li of the external circuit (excluding the cable) is $\geq$ 1% of the Lo value and
- the total Ci of the external circuit (excluding the cable) is $\geq$ 1% of the Co value.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1uF for IIA, IIB and 600 nF for IIC.

WARNING - Substitution of components may impair intrinsic safety and suitability for use in Class I, Div. 2/Zone 2.
AVERTISSEMENT - La substitution de composants peut compromettre la sécurité intrinsèque et l'adéquation à une utilisation en Classe I, Div. 2/Zone 2.