

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 U_o), I_{sc} (or I_o) and P_o for the associated apparatus are less than or equal to V_{max} (U_i) and I_{max} (I_i) for the intrinsically safe apparatus and the approved values of C_a (C_o) and L_a (L_o) for the associated apparatus are greater than $C_i + C_{cable}$ and $L_i + L_{cable}$, respectively, for the intrinsically safe apparatus.

The parameters in Table 1 apply when one of the two conditions below is given:

- The total L_i of the external circuit (excluding the cable) is $< 1\%$ of the L_o value or
- The total C_i of the external circuit (excluding the cable) is $< 1\%$ of the C_o value.

The parameters in Table 1 are reduced to 50% when both of the two conditions below are given:

- The total L_i of the external circuit (excluding the cable) $> 1\%$ of the L_o and
- The total C_i of the external circuit (excluding the cable) $> 1\%$ of the C_o .

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 μ F for C, D (IIB) and 600nF for A, B (IIC).

- 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. Modules with multiple intrinsically safe field wiring pairs shall be installed as separate intrinsically safe circuits.
- 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.

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5. The barriers are rated 'Nonincendive'. If the barriers are intended to be mounted in a Division 2 location, they must be mounted in an enclosure with a minimum ingress protection of IP2X. If the barriers are intended to be mounted in a Zone 2 location they must be mounted in an enclosure with a minimum ingress protection of IP54. The enclosure must be able to accept Division 2 / Zone 2 wiring methods. A temperature rating of T4 applies to all nonincendive rated barriers.
6. Connection of barriers to ground is not required.
7. **WARNING:** Substitution of components may impair intrinsic safety or Suitability for Division 2.
AVERTISSEMENT: La substitution de composants peut compromettre la sécurité intrinsèque.
8. **ATTENTION:** For **PERMITTED INTERCONNECTION OF ANALOG BARRIERS:**
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, worst case cable capacitance C_{cable} of 60 pF/ft. and worst case cable inductance L_{cable} of 0.2 uH/ft shall be used. This allows a maximum cable length between barriers of 1,383 feet.
9. 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.
10. Intrinsically safe circuits must be wired and separated in accordance with Article 504.20 or other local codes, as applicable.
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.
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. The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location
13. For Zone 2 installations, ensure protection of supply terminals against transient voltages exceeding 140% of the rated supply voltage.
14. This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D and Class I, Zone 2 or non-hazardous locations only.
WARNING – EXPLOSION HAZARD - Do not disconnect equipment or actuate switches unless power has been removed or the area is known to be non-hazardous.
WARNING – EXPLOSION HAZARD – Substitution of components may impair safety.


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TABLE 1 – ENTITY PARAMETERS

MODEL NUMBER	TERMINALS	Voc (V)	Isc (mA)	Vt(V)	It(mA)	Groups Ca (µF)			Groups La(mH)		
						A,B	C,E	D,F,G	A,B	C,E	D,F,G
KFD0-CS-Ex1.50P	1,2	25.2	93	-	-	0.107	0.82	2.90	4.3	18	33
KFD0-CS-Ex1.51P	1,2	25.2	93	-	-	0.107	0.82	2.90	4.3	18	33
KFD0-CS-Ex1.52	1,2	28	0	-	-	0.083	0.39	1.04	1000	1000	1000
KFD0-CS-Ex1.53P	1,2	10.5	95	-	-	2.41	16.8	75	4.0	17.0	32.0
KFD0-CS-Ex1.54	1,2	28.5	95.0	-	-	0.13	0.41	1.10	4.09	16.02	32.82
KFD0-CS-Ex1.54-Y72221	1,2	25.4	42	-	-	0.17	0.51	1.36	20.5	61.5	164
KFD0-CS-Ex2.50P	1,2;4,5	25.2	93	-	-	0.107	0.82	2.90	4.3	18	33
KFD0-CS-Ex2.51P	1,2;4,5	25.2	93	-	-	0.107	0.82	2.90	4.3	18	33
KFD0-CS-Ex2.52	1,2;4,5	28	0	-	-	0.083	0.39	1.04	1000	1000	1000
KFD0-CS-Ex2.53P	1,2;4,5	10.5	95	-	-	2.41	16.8	75	4.0	17.0	32.0
KFD0-CS-Ex2.54	1,2;4,5	28.5	95.0	-	-	0.13	0.41	1.10	4.09	16.02	32.82
KFD0-CS-Ex2.54-Y72222	1,2;4,5	25.4	42	-	-	0.17	0.51	1.36	20.5	61.5	164
KFD2-CD-Ex1.32* (* = blank or -1 thru -8)	1,2	25.2	93	-	-	0.107	0.82	2.90	3.05	9.15	24.4
KFD2-CD-Ex1.32* (* = -9 thru -25)	1,2	25.2	95	-	-	0.107	0.82	2.90	3.05	9.15	24.4
KFD2-CD2-Ex1	1,2	25.2	93	-	-	0.095	0.808	2.888	4.2	17	33
KFD2-CD2-Ex2	1,2;4,5	25.2	93	-	-	0.095	0.808	2.888	4.2	17	33
KFD2-GU-Ex1	1,2,3,4,5,6	-	-	10.5	27	2.4	16.8	75	37	142	290
KFD2-FF-Ex2.RS232	1,2,3	-	-	19.9	75	0.223	1.420	5.570	6.59	26.30	54.39
KFD2-PT2-Ex1* (* = blank or -1 thru -5)	1,2,3,4,5	-	-	10.4	31.4	2.53	17.40	79.00	36.07	132.57	273.55
KFD2-PT2-Ex1-Y98312	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-PT2-Ex1-1-Y107265	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-PT2-Ex1-2-Y107266	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-PT2-Ex1-3-Y107267	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-PT2-Ex1-4-Y107268	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-PT2-Ex1-5-Y107269	1,2,3,4,5	-	-	10.4	46	2.53	17.40	79.00	17.23	64.57	136.24
KFD2-SCD-Ex1.LK	1,2	25.2	93	-	-	0.107	0.820	2.900	4.30	17.72	36.02
KFD2-SCD2-Ex1.LK	1,2	25.2	93	-	-	0.095	0.808	2.888	4.2	17	33
KFD2-SCD2-Ex2.LK	1,2;4,5	25.2	93	-	-	0.095	0.808	2.888	4.2	17	33
KFD2-SL2-Ex1* (* = blank or .B)	1,2,3	28	110	-	-	0.083	0.249	0.664	3	12	24
KFD2-SL2-Ex2* (* = blank or .B)	1,2,3; 4,5,6	28	110	-	-	0.083	0.249	0.664	3	12	24
KFD2-STC3-Ex1* (* = blank, -1, -2 or -3)	1,3	28	93	-	-	0.083	0.39	1.04	4.2	12.6	33.6
KFD2-STC4-Ex1* (* = blank, .20, .20-Y followed by up to 6 numbers or -Y followed by up to 6 numbers)	1,3	25.4	86.8	-	-	0.081	0.786	2.688	4.6	18	36
	3,2	3.5	74.0	-	-	99.9	99.9	99.9	6.4	25	50
	1,2,3	-	-	25.4	115	0.081	0.786	2.688	2.7	11	22
KFD2-STC4-Ex1-Y122583	1,3	25.4	86.8			0.093	0.798	2.808	4.6	18	36
KFD2-STC4-Ex1-Y231365											



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		respons.		GB.PAW
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TABLE 1 – ENTITY PARAMETERS (Continued)

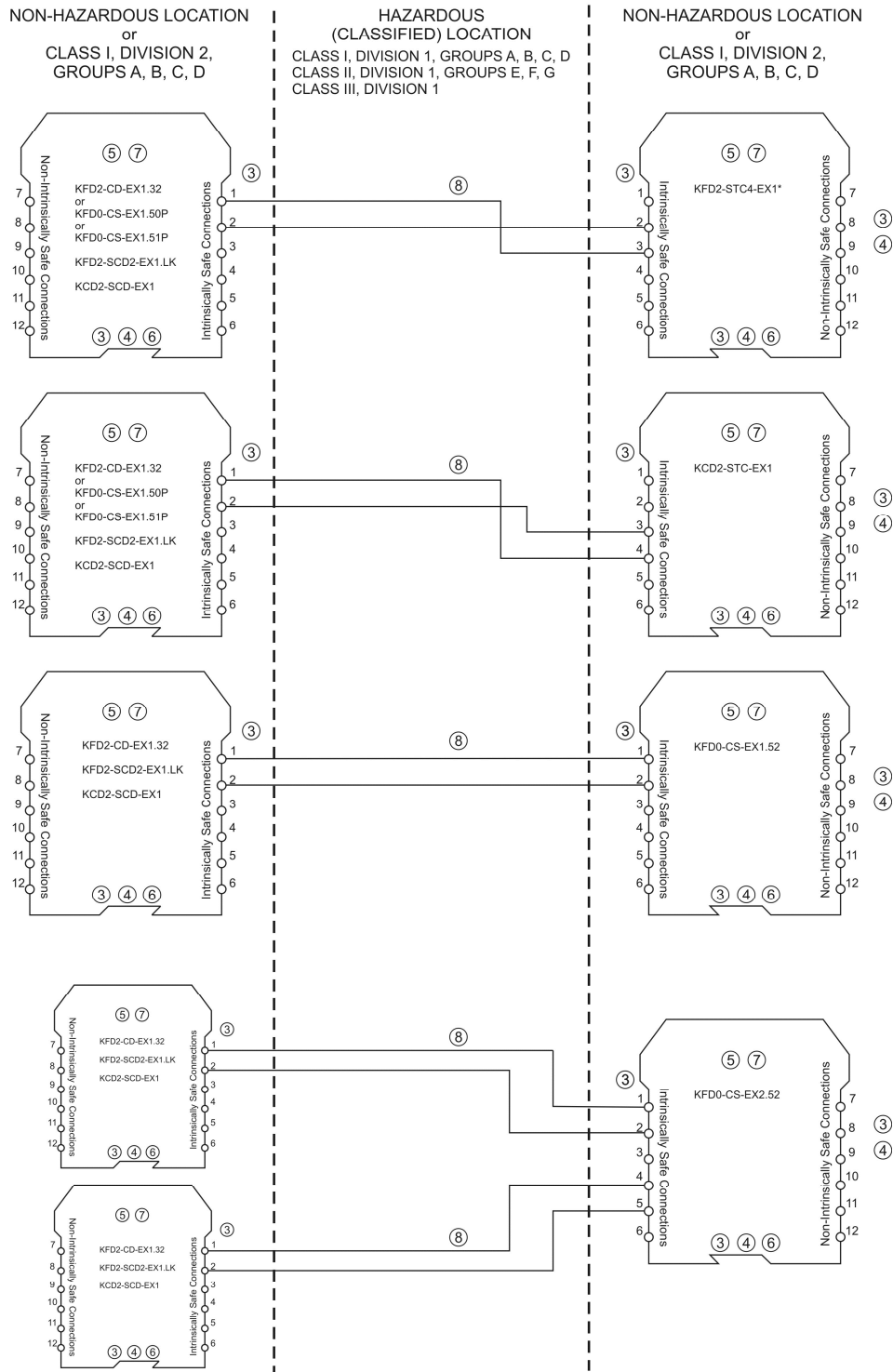
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						A,B	C,E	D,F,G	A,B	C,E	D,F,G
KFD2-STC4-Ex2* (* = blank or Y followed by up to 6 numbers)	1,3	25.2	93	-	-	0.083	0.688	2.876	4.2	17	33
	4,6	25.2	93	-	-	0.083	0.688	2.876	4.2	17	33
KFD2-STC4-Ex1.H	1,3	27.2	93			0.077	0.678	2.288	4.1	16.4	32.8
	3,2	3.5	73			100	100	100	6.4	25	50
	1,2,3	27.2	117			0.077	0.678	2.288	2.2	10	20
KFD2-STC4-Ex1.20.H	1,3	27.2	93			0.077	0.678	2.288	4.1	16.4	32.8
	3,2	3.5	73			100	100	100	6.4	25	50
	1,2,3	27.2	117			0.077	0.678	2.288	2.2	10	20
KFD2-STV3-Ex1* (* = blank, -1, -2 or -3)	1,3	28	93	-	-	0.083	0.39	1.04	4.2	12.6	33.6
KFD2-STV4-Ex1* (* = A combination of numbers and letters)	1,3	25.4	86.8	-	-	0.081	0.786	2.688	4.6	18	36
	3,2	3.5	74.0	-	-	99.9	99.9	99.9	6.4	25	50
	1,2,3	-	-	25.4	115	0.081	0.786	2.688	2.7	11	22
KFD2-STV4-Ex2* (* A combination of numbers and letters)	1,3	25.2	93	-	-	0.083	0.688	2.876	4.2	17	33
	4,6	25.2	93	-	-	0.083	0.688	2.876	4.2	17	33
KFD2-VR-Ex1.18	4,5	18	4.2	-	-	.309	1.78	7.6	492	1000	1000
KFD2-VR-Ex1.19	4,5	18	4.2	-	-	.309	1.78	7.6	492	1000	1000
KFD2-VR-Ex1.19-Y109129	4,5	15.5	7.2	-	-	.309	1.78	7.6	492	1000	1000

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Permitted interconnection of Analog Barriers

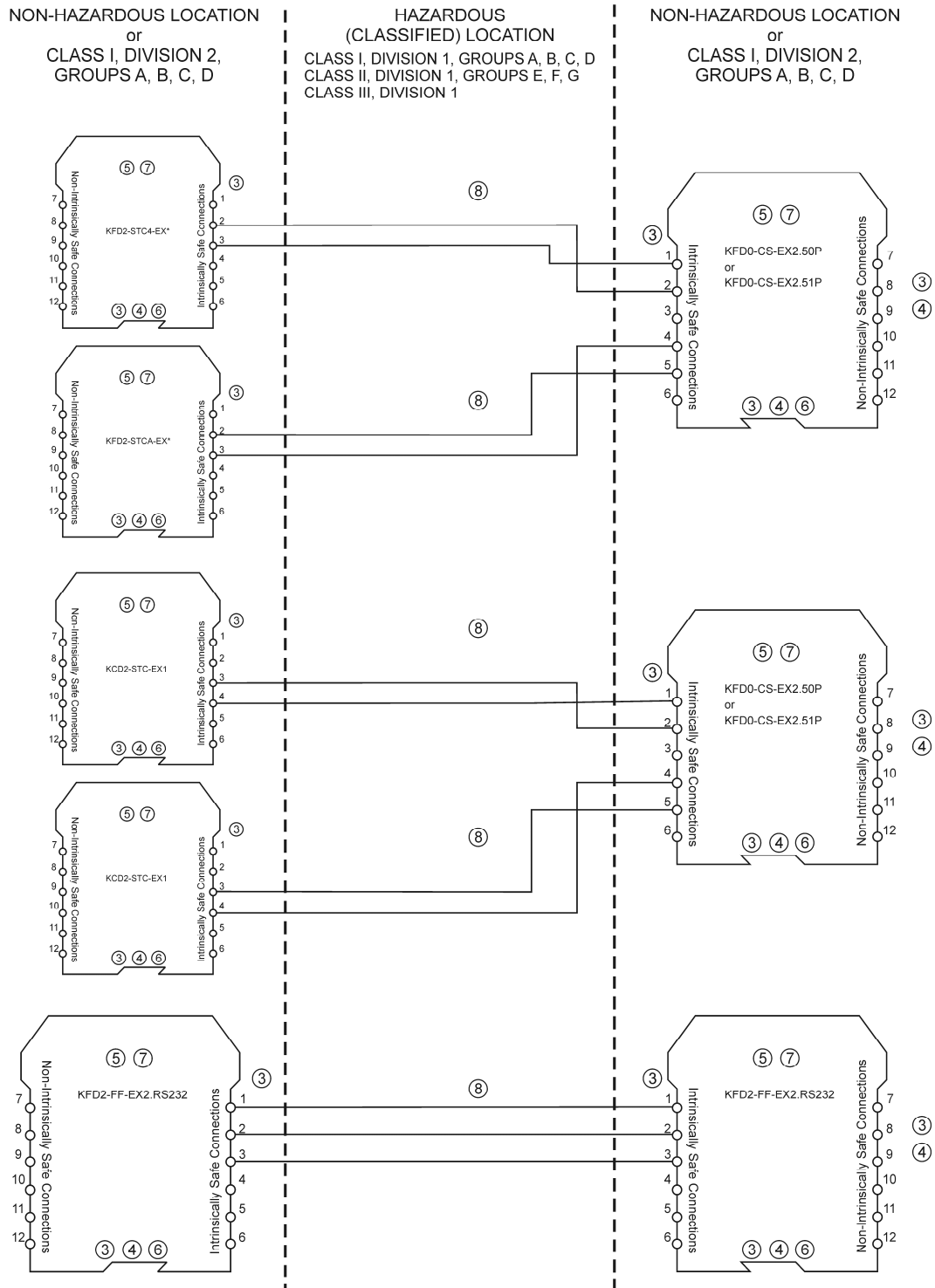


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		approved		GB.TC
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