

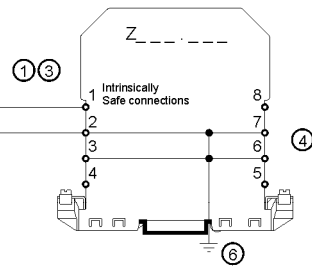
HAZARDOUS AREA

CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

CONNECTION DIAGRAM 1

NON-HAZARDOUS AREA ⑤
 OR
 CLASS I, DIVISION 2, GROUPS A,B,C,D ⑤

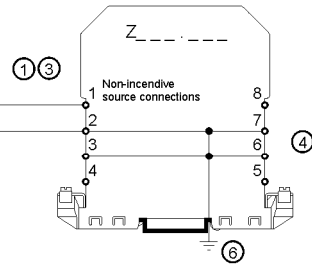


HAZARDOUS (CLASSIFIED) LOCATION

CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

Non-incendive field circuit with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

CONNECTION DIAGRAM 1A



HAZARDOUS AREA

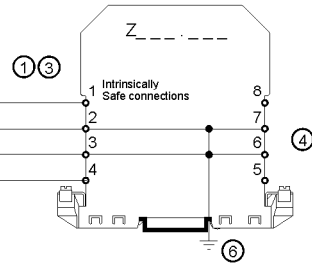
CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

Note: Ground returns must be run separately.

CONNECTION DIAGRAM 2



HAZARDOUS (CLASSIFIED) LOCATION

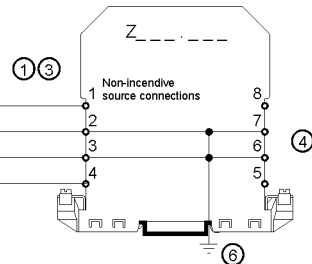
CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

Non-incendive field circuit with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

Non-incendive field circuit with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

Note: Ground returns must be run separately.

CONNECTION DIAGRAM 2A



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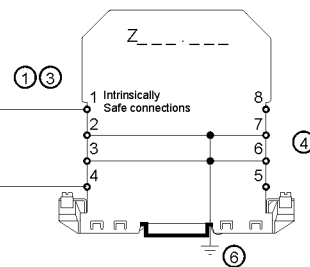
CONFIDENTIAL according ISO 16016	Only valid as long as released in EDM or with a valid production documentation!	scale:	date:2014-Nov-11
PF PEPPERL+FUCHS	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9... Zener Barriers	respons.	GB-TC
		approved	GB-PAW
		norm	GB-PT
Twinsburg			116-0139D sheet 1 of 11

HAZARDOUS AREA
 CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

CONNECTION DIAGRAM 3

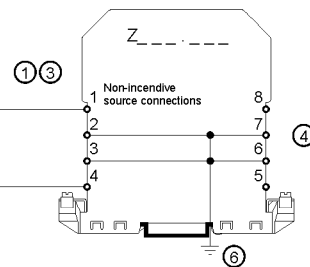
NON-HAZARDOUS AREA ⑤
 OR
 CLASS I, DIVISION 2, GROUPS A,B,C,D ⑤



HAZARDOUS (CLASSIFIED) LOCATION
 CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

Non-incendive field circuit with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

CONNECTION DIAGRAM 3A



HAZARDOUS AREA
 CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

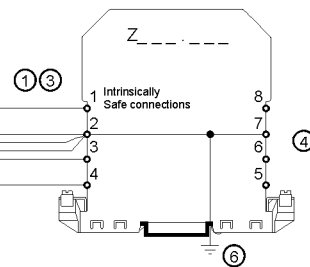
Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to associated apparatus with Entity Concept parameters listed in Table 1.

Note: Ground returns must be run separately.

CONNECTION DIAGRAM 4



HAZARDOUS (CLASSIFIED) LOCATION
 CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

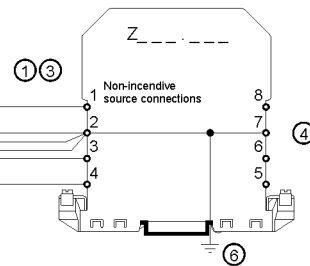
Non-incendive field circuit with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

Non-incendive field circuit with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

Non-incendive field circuit with Entity Concept parameters ① (Vmax, Imax, Ci, Li) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

Note: Ground returns must be run separately.

CONNECTION DIAGRAM 4A



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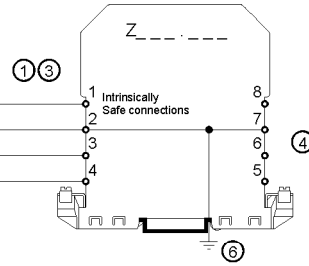
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PF PEPPERL+FUCHS	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9... Zener Barriers	respons.	GB-TC
		approved	GB-PAW
		norm	GB-PT
Twinsburg			116-0139D sheet 2 of 11

HAZARDOUS AREA
 CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

Any Simple Apparatus ② or I.S. devices with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to associated apparatus with Entity Concept parameters listed below.

CONNECTION DIAGRAM 5

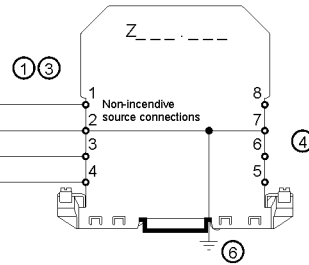
NON-HAZARDOUS AREA ⑤
 OR
 CLASS I, DIVISION 2, GROUPS A,B,C,D ⑤



HAZARDOUS (CLASSIFIED) LOCATION
 CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

Non-incendive field circuit with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

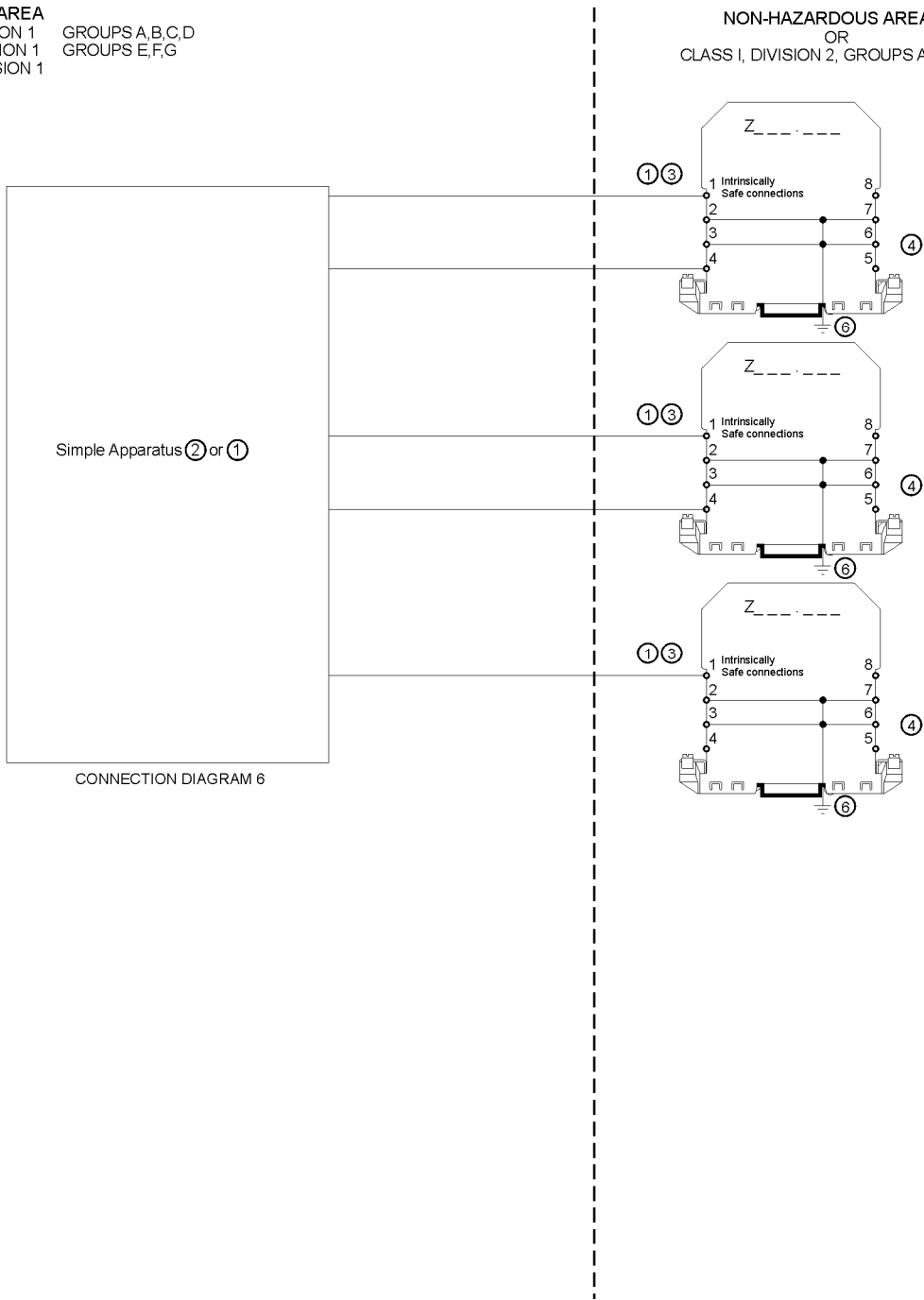
CONNECTION DIAGRAM 5A



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PF PEPPERL+FUCHS	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9.. Zener Barriers	respons.	GB-TC
		approved	GB-PAW
		norm	GB-PT
Twinsburg			116-0139D sheet 3 of 11

HAZARDOUS AREA
 CLASS I, DIVISION 1 GROUPS A,B,C,D
 CLASS II, DIVISION 1 GROUPS E,F,G
 CLASS III, DIVISION 1

NON-HAZARDOUS AREA ⑤
 OR
 CLASS I, DIVISION 2, GROUPS A,B,C,D ⑤



CONNECTION DIAGRAM 6

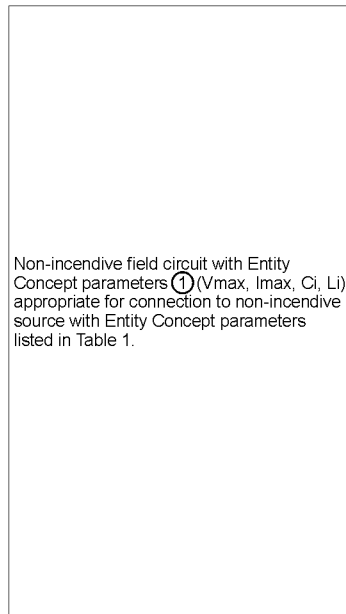
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	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9.. Zener Barriers	respons.	GB-TC	116-0139D	
		approved	GB-PAW		
		norm	GB-PT		
Twinsburg					

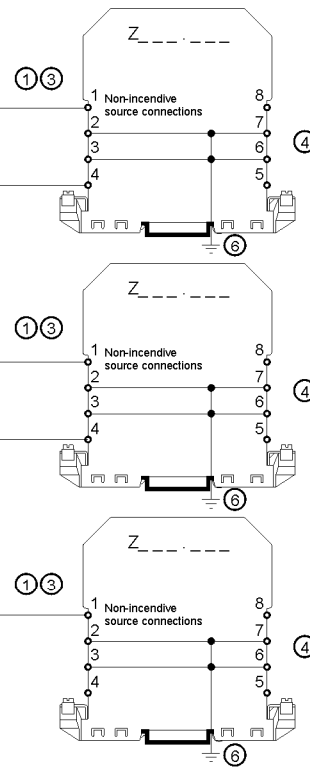
HAZARDOUS (CLASSIFIED) LOCATION
 CLASS I, DIVISION 2 GROUPS A,B,C,D
 CLASS II, DIVISION 2 GROUPS F,G
 CLASS III, DIVISION 2

NON-HAZARDOUS AREA ⑤
 OR
 CLASS I, DIVISION 2, GROUPS A,B,C,D ⑤



Non-incendive field circuit with Entity Concept parameters ① (V_{max} , I_{max} , C_i , L_i) appropriate for connection to non-incendive source with Entity Concept parameters listed in Table 1.

CONNECTION DIAGRAM 6A



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PEPPERL+FUCHS Twinsburg	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9.. Zener Barriers	respons.	GB-TC
		approved	GB-PAW
		norm	GB-PT
		116-0139D	
		sheet 5 of 11	

TABLE 1 – ENTITY PARAMETERS

MODEL NUMBER	TERMINALS	U _o (Voc) (V)	I _o (Isc) (mA)	V _t (V)	I _t (mA)	Groups Ca (µF)			Groups La(mH)		
						A,B	C,E	D,F,G	A,B	C,E	D,F,G
Z705	1,2	4.94	504	-	-	100	300	800	0.14	0.42	1.12
Z710	1,2	9.56	195	-	-	3	9	24	0.86	2.58	6.88
Z710.CL	1,2	9.56	195	-	-	3	9	24	0.86	2.58	6.88
Z713	1,2	15.75	723	-	-	0.48	1.44	3.84	0.076	0.228	0.608
Z715	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
Z715.CL	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
Z715.1K	1,2	14.7	15	-	-	0.58	1.74	4.64	144	432	1152
Z722	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
Z722.CL	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
Z726	1,2	27.5	155	-	-	-	0.27	0.72	-	4	8
Z728	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
Z728.CL	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
Z728.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
Z731	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	2,3	7.2	1470	-	-	13.5	40.5	108	0.02	0.06	0.16
	2,4	7.2	1470	-	-	13.5	40.5	108	0.02	0.06	0.16
	1,2,3,4	-	-	28	1570	0.083	0.249	0.664	0.02	0.06	0.16
Z755	1,2	4.94	504	-	-	100	300	800	0.14	0.42	1.12
	3,4	4.94	504	-	-	100	300	800	0.14	0.42	1.12
	1,2,3,4	-	-	4.94	1008	100	300	800	0.03	0.09	0.24
Z757	1,2	7.14	729	-	-	13.5	40.5	108	0.07	0.21	0.56
	3,4	7.14	729	-	-	13.5	40.5	108	0.07	0.21	0.56
	1,2,3,4	-	-	7.14	1457	13.5	40.5	108	0.02	0.06	0.16
Z763	1,2	11.6	370	-	-	1.41	4.23	11.28	0.24	0.72	1.92
	3,4	1.6	51	-	-	100	300	800	14	42	112
	1,2,3,4	-	-	13.2	422	0.94	2.82	7.52	0.2	0.6	1.6
Z764	1,2	11.6	12	-	-	1.41	4.23	11.28	240	720	1,920
	3,4	11.6	12	-	-	1.41	4.23	11.28	240	720	1,920
	1,2,3,4	-	-	11.6	24	1.41	4.23	11.28	61	183	488
Z765	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	3,4	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	1,2,3,4	-	-	14.7	300	0.58	1.74	4.64	0.32	0.96	2.56
Z772	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
	3,4	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
	1,2,3,4	-	-	22	300	-	0.51	1.36	-	4.35	11.6
Z778	1,2	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	3,4	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	1,2,3,4	-	-	28	93	0.083	0.249	0.664	3.05	9.15	24.4
Z779	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	1,2,3,4	-	-	28	186	-	0.249	0.664	-	4	8
Z779.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	1,2,3,4	-	-	28	238	-	0.249	0.664	-	2	4
Z786	1,2	28	0	-	-	0.083	0.249	0.664	5	15	40
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	0	0.083	0.249	0.664	5	15	40

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		approved	GB-PAW
		norm	GB-PT
		116-0139D	
		sheet 6 of 11	

TABLE 1 – ENTITY PARAMETERS (Continued)

MODEL NUMBER	TERMINALS	Uo (Voc) (V)	Io (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
Z787	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	93	0.083	0.249	0.664	3.05	9.15	24.4
Z787.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	119	0.083	0.249	0.664	1.82	5.46	14.56
Z788	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	288	0.083	0.249	0.664	0.32	0.96	2.56
Z788.R	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	288	0.083	0.249	0.664	0.32	0.96	2.56
Z788.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	314	0.083	0.249	0.664	0.26	0.78	2.08
Z788.R.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	314	0.083	0.249	0.664	0.26	0.78	2.08
Z796	1,2	26.6	85	-	-	0.094	0.282	0.752	5.14	15.42	41.12
	3,4	20.5	50	-	-	0.203	0.609	1.624	14.6	43.8	116.8
	1,2,3,4	-	-	26.6	135	0.094	0.282	0.752	2.05	6.15	16.4
Z796.L	1,2	26.0	83	-	-	0.094	0.282	0.752	5.14	15.42	41.12
	3,4	20.0	49	-	-	0.203	0.609	1.624	14.6	43.8	116.8
	1,2,3,4	-	-	26.0	132	0.094	0.282	0.752	2.05	6.15	16.4
Z805	1,2	4.94	504	-	-	100	300	800	0.14	0.42	1.12
Z810	1,2	9.56	195	-	-	3	9	24	0.86	2.58	6.88
Z810.CL	1,2	9.56	195	-	-	3	9	24	0.86	2.58	6.88
Z813	1,2	15.75	723	-	-	0.48	1.44	3.84	0.076	0.228	0.608
Z815	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
Z815.CL	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
Z815.1K	1,2	14.7	15	-	-	0.58	1.74	4.64	144	432	1152
Z822	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
Z822.CL	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
Z828	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
Z828.CL	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
Z828.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
Z855	1,2	4.94	504	-	-	100	300	800	0.14	0.42	1.12
	3,4	4.94	504	-	-	100	300	800	0.14	0.42	1.12
	1,2,3,4	-	-	4.94	1008	100	300	800	0.03	0.09	0.24
Z857	1,2	7.14	729	-	-	13.5	40.5	108	0.07	0.21	0.56
	3,4	7.14	729	-	-	13.5	40.5	108	0.07	0.21	0.56
	1,2,3,4	-	-	7.14	1457	13.5	40.5	108	0.02	0.06	0.16
Z864	1,2	11.6	12	-	-	1.41	4.23	11.28	240	720	1,920
	3,4	11.6	12	-	-	1.41	4.23	11.28	240	720	1,920
	1,2,3,4	-	-	11.6	24	1.41	4.23	11.28	61	183	488
Z865	1,2	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	3,4	14.7	150	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	1,2,3,4	-	-	14.7	300	0.58	1.74	4.64	0.32	0.96	2.56

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TABLE 1 – ENTITY PARAMETERS (Continued)

MODEL NUMBER	TERMINALS	Uo (Voc) (V)	Io (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
Z872	1,2	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
	3,4	22	150	-	-	0.17	0.51	1.36	1.45	4.35	11.6
	1,2,3,4	-	-	22	300	-	0.51	1.36	-	4.35	11.6
Z878	1,2	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	3,4	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	1,2,3,4	-	-	28	93	0.083	0.249	0.664	3.05	9.15	24.4
Z879	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	1,2,3,4	-	-	28	186	-	0.249	0.664	-	4	8
Z879.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	1,2,3,4	-	-	28	238	-	0.249	0.664	-	2	4
Z886	1,2	28	0	-	-	0.083	0.249	0.664	5	15	40
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	0	0.083	0.249	0.664	5	15	40
Z887	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	93	0.083	0.249	0.664	3.05	9.15	24.4
Z887.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	28	0	-	-	0.083	0.249	0.664	5	15	40
	1,2,3,4	-	-	28	119	0.083	0.249	0.664	1.82	5.46	14.56
Z888	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	288	0.083	0.249	0.664	0.32	0.96	2.56
Z888.R	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	288	0.083	0.249	0.664	0.32	0.96	2.56
Z888.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	314	0.083	0.249	0.664	0.26	0.78	2.08
Z888.R.H	1,2	28	119	-	-	0.083	0.249	0.664	1.82	5.46	14.56
	3,4	9.56	195	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	28	314	0.083	0.249	0.664	0.26	0.78	2.08
Z896	1,2	26.6	85	-	-	0.094	0.282	0.752	5.14	15.42	41.12
	3,4	20.5	50	-	-	0.203	0.609	1.624	14.6	43.8	116.8
	1,2,3,4	-	-	26.6	135	0.094	0.282	0.752	2.05	6.15	16.4
Z896.L	1,2	26.0	83	-	-	0.094	0.282	0.752	5.14	15.42	41.12
	3,4	20.0	49	-	-	0.203	0.609	1.624	14.6	43.8	116.8
	1,2,3,4	-	-	26.0	132	0.094	0.282	0.752	2.05	6.15	16.4
Z905	1,2	4.89	499	-	-	100	300	800	0.14	0.42	1.12
Z910	1,2	9.94	203	-	-	3	9	24	0.86	2.58	6.88
Z915	1,2	15	153	-	-	0.58	1.74	4.64	1.3	3.9	10.4
Z915.1k	1,2	15	15	-	-	0.58	1.74	4.64	144	432	1152
Z922	1,2	+11	218	-	-	1.97	5.91	15.76	0.74	2.22	5.92
	3,4	-11	218	-	-	1.97	5.91	15.76	0.74	2.22	5.92
	1,2,3,4	-	-	22	218	0.17	0.51	1.36	0.26	0.78	2.08
Z928	1,2	28	93	-	-	0.083	0.249	0.664	3.05	9.15	24.4

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 Twinsburg	Control Drawing Installation Drawing for UL listed Z7..., Z8..., Z9... Zener Barriers			respons.	GB-TC	116-0139D
				approved	GB-PAW	
				norm	GB-PT	

TABLE 1 – ENTITY PARAMETERS (Continued)

MODEL NUMBER	TERMINALS	Uo (Voc) (V)	Io (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
Z954	1,2	4.5	383	-	-	100	300	800	0.24	0.72	1.92
	2,3	4.5	383	-	-	100	300	800	0.24	0.72	1.92
	2,4	4.5	383	-	-	100	300	800	0.24	0.72	1.92
	1,2,3;2,3,4	9	765	-	-	4.9	14.7	39.2	0.068	0.204	0.544
	1,2,3,4	-	-	9	1150	4.9	14.7	39.2	0.030	0.090	0.24
Z955	1,2	4.89	499	-	-	100	300	800	0.14	0.42	1.12
	3,4	4.89	499	-	-	100	300	800	0.14	0.42	1.12
	1,2,3,4	-	-	9.78	998	3.3	9.9	26.4	0.030	0.090	0.24
Z960	1,2	9.94	203	-	-	3	9	24	0.86	2.58	6.88
	3,4	9.94	203	-	-	3	9	24	0.86	2.58	6.88
	1,2,3,4	-	-	9.94	406	3	9	24	0.19	0.57	1.52
Z961 (Single module Installation)	1,2	8.7	89	-	-	4.9	14.7	39.2	4.69	14.07	37.52
	3,4	8.7	89	-	-	4.9	14.7	39.2	4.69	14.07	37.52
	1,2,3,4	-	-	17.4	178	0.346	1.038	2.768	1.14	3.42	9.12
Z961 (Installed as detailed in Diagram 6)	1,4	-	-	17.4	213	0.346	1.038	2.768	1.14	3.42	9.12
Z961.H	1,2	8.7	25	-	-	4.9	14.7	39.2	57	171	456
	3,4	8.7	25	-	-	4.9	14.7	39.2	57	171	456
	1,2,3,4	-	-	17.4	49	0.346	1.038	2.768	15.2	45.6	121.6
Z964	1,2	12	12	-	-	1.41	4.23	11.28	240	720	1920
	3,4	12	12	-	-	1.41	4.23	11.28	240	720	1920
	1,2,3,4	-	-	24	24	0.125	0.375	1	61	183	488
Z965	1,2	15	153	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	3,4	15	153	-	-	0.58	1.74	4.64	1.3	3.9	10.4
	1,2,3,4	-	-	15	306	0.58	1.74	4.64	0.29	0.87	2.32
Z966	1,2	12	82	-	-	1.41	4.23	11.28	5.52	16.56	44.16
	3,4	12	82	-	-	1.41	4.23	11.28	5.52	16.56	44.16
	1,2,3,4	-	-	24	164	0.125	0.375	1	1.38	4.14	11.04
Z966.H	1,2	12	164	-	-	1.41	4.23	11.28	1.38	4.14	11.04
	3,4	12	164	-	-	1.41	4.23	11.28	1.38	4.14	11.04
	1,2,3,4	-	-	24	328	0.125	0.375	1	0.33	0.99	2.64
Z967	1,2	16.8	143	-	-	0.38	1.14	3.04	1.63	4.89	13.04
	3,4	16.8	143	-	-	0.38	1.14	3.04	1.63	4.89	13.04
	1,2,3,4	-	-	16.8	286	0.38	1.14	3.04	0.24	0.72	1.92
Z969	1,2	14.24	400	-	-	0.68	2.04	5.44	0.16	0.48	1.28
	3,4	17.6	349	-	-	0.33	0.99	2.64	0.14	0.42	1.12
	1,2,3,4	-	-	17.6	749	0.33	0.99	2.64	0.071	0.213	0.568
Z972	1,2	22	73	-	-	0.17	0.51	1.36	6.95	20.85	55.6
	3,4	22	73	-	-	0.17	0.51	1.36	6.95	20.85	55.6
	1,2,3,4	-	-	22	146	0.17	0.51	1.36	1.45	4.35	10.8
Z978	1,2	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	3,4	28	46	-	-	0.083	0.249	0.664	17.2	51.6	137.6
	1,2,3,4	-	-	28	93	0.083	0.249	0.664	3.05	9.15	24.4

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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 U_o (V_{oc}), I_o (I_{sc}) 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 $1\mu F$ for C, D (IIB) and $600nF$ for A, B (IIC).

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: $C_{cable} = 60 \text{ pF/ft.}$, $L_{cable} = 0.2 \mu H/ft.$

2. 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).
3. Wiring methods must be in accordance with the electrical code of the country in use.
Barriers with multiple intrinsically safe field wiring pairs shall be installed as separate intrinsically safe circuits.
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.
4. 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 that is subject to contamination by water or dust, they must be mounted in an enclosure with a minimum ingress protection of IP54. If the barriers are intended to be mounted in a Zone 2 indoor location that is not subject to contamination by water or dust, they must be mounted in an enclosure with a minimum ingress protection of IP4X. The enclosure must be able to accept Division 2 / Zone 2 wiring methods. A temperature rating of T4 applies to all nonincendive rated barriers.
 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.
 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.

6. Barriers must be connected to a suitable ground electrode per the National Electrical Code, ANSI/NFPA 70, Article 504. The resistance of the ground path must be less than 1 ohm. Any of the terminals 2,3,6,7 or the two wire clamp terminals at the base of the barrier may be used for this purpose. Alternatively, the ground connection may be established by mounting the barrier on standard 35mm DIN rail, when meeting the following conditions:
 - a. DIN rail must be standard 35mm DIN rail (35mm ± 0.3mm).
 - b. Any corrosion on the DIN rail must be removed and the DIN rail must be checked for the standard tolerance of 35mm ± 0.3mm.
 - c. A continuity check must be conducted between the DIN rail and any ground terminal on the barrier, terminals 2,3,6,7 or the wire clamp terminals at the base of the barrier.
 - d. Connect 35mm DIN rail to the ground electrode using hardware suitable to provide a ground path resistance of less than 1 ohm.

7. Up to 5 channels can be connected to a simple apparatus as shown in connection diagram 6 (6A).

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