FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

Shunt Diode

Z705, Z710, Z710.CL, Z713, Z715, Z715.CL, Z715.F...

Z Series Zener Barriers
AIS / I,II,III / 1 / ABCDEFG - 116-0118 / D; Entity
NI / I / 2 / ABCD / T5 Ta = 60°C

Type	V_{oc} *(V)*	I_{sc} *(mA)*	V_t *(V)*	I_t *(mA)*	C_a *(µF)*	L_a *(mH)*
Z705	4.97	507	-	-	1000	0.10
Z710	9.77	200	-	-	3.51	0.48
Z710.CL	9.77	200	-	-	3.51	0.48
Z713	15.75	724	-	-	0.67	0.07
Z715	15.2	155	-	-	0.76	1.09
Z715.CL	15.2	155	-	-	0.76	1.09
Z715.F	15.2	155	-	-	0.76	1.09
Z715.1k	15.2	15.5	-	-	0.76	137
Z722	22.7	155	-	-	0.24	1.10
Z722.CL	22.7	155	-	-	0.24	1.10
Z728	28.0	93.0	-	-	0.13	3.91
Z728.CL	28.0	93.0	-	-	0.13	3.91
Z728.F	28.0	93.0	-	-	0.13	3.91

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Z731						
Terminals 1-2	28	93.0	-	-	0.13	3.91
Terminals 3-2 and 4-2	7.14	1456	-	-	10	0.03
Terminals 1, 2, 3, 4	-	-	30	1549.3	0.11	0.03
Z755						
Terminals 1-2	4.97	507	-	-	1000	0.10
Terminals 3-4	4.97	507	-	-	1000	0.10
Terminals 1-4	-	-	5.97	1014	128	0.02
Z757						
Terminals 1-2	7.30	745	-	-	12.3	0.03
Terminals 3-4	7.30	745	-	-	12.3	0.03
Terminals 1-4	-	-	8.30	1489	6.89	0.01
Z764						
Terminals 1-2	11.9	12.1	-	-	1.69	220
Terminals 3-4	11.9	12.1	-	-	1.69	220
Terminals 1-4	-	-	12.9	24.3	1.28	57.0
Z765						
Terminals 1-2	15.2	155	-	-	0.76	1.09
Terminals 3-4	15.2	155	-	-	0.76	1.09
Terminals 1-4	-	-	16.2	309	0.62	0.20
Z765.F						
Terminals 1-2	15.2	155	-	-	0.76	1.09
Terminals 3-4	15.2	155	-	-	0.76	1.09
Terminals 1-4	-	-	16.2	309	0.62	0.20
Z772						
Terminals 1-2	22.7	155	-	-	0.24	1.10
Terminals 3-4	22.7	155	-	-	0.24	1.10
Z778						
Terminals 1-2	28.0	46.0	-	-	0.13	15.6
Terminals 3-4	28.0	46.0	-	-	0.13	15.6
Terminals 1-4	-	-	30.0	93.0	0.11	3.91
Z779						
Terminals 1-2	28.0	93.0	-	-	0.13	3.91
Terminals 1-2	28.0	93.0	-	-	0.13	3.91
Z779.F						
Terminals 1-2	28.0	93.0	-	-	0.13	3.91
Terminals 3-4	28.0	93.0	-	-	0.13	3.91
Z786						
Terminals 1-2	28.0	0.0	-	-	0.13	4.29
Terminals 3-4	28.0	0.0	-	-	0.13	4.29

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Terminals 1-4	-	-	30.0	0.0	0.11	4.29
Z787						
Terminals 1-2	28.0	93.0	-	-	0.13	3.91
Terminals 3-4	28.0	0.0	-	-	0.13	3.91
Terminals 1-4	-	-	30.0	93.0	0.11	3.91
Z787.F						
Terminals 1-2	28.0	93.0	-	-	0.13	3.91
Terminals 3-4	28.0	0.0	-	-	0.13	3.91
Terminals 1-4	-	-	30.0	93.0	0.11	3.91
Z788						
Terminals 1-2	28.0	93.0			0.13	3.91
Terminals 3-4	9.77	200			3.51	0.48
Terminals 1-4			29.9	296	0.12	0.21
Z788.R						
Terminals 1-2	28.0	93.0			0.13	3.91
Terminals 3-4	9.77	200			3.51	0.48
Terminals 1-4			29.9	296	0.12	0.21
Z796						
Terminals 1-2	27.5	87.7			0.15	4.71
Terminals 3-4	20.8	51.0			0.30	13.6
Terminals 1-4			29.5	139	0.12	1.60
Z805	-4.97	507	-	-	1000	0.10
Z810	-9.77	200	-	-	3.51	0.48
Z810.CL	-9.77	200	-	-	3.51	0.48
Z813	-15.75	724	-	-	0.67	0.07
Z815	-15.2	155	-	-	0.76	1.09
Z815.CL	-15.2	155	-	-	0.76	1.09
Z815.F	-15.2	155	-	-	0.76	1.09
Z815.1k	-15.2	15.5	-	-	0.76	137
Z822	-22.7	155	-	-	0.24	1.10
Z822.CL	-22.7	155	-	-	0.24	1.10
Z828	-28.0	93.0	-	-	0.13	3.91
Z828.CL	-28.0	93.0	-	-	0.13	3.91
Z828.F	-28.0	93.0	-	-	0.13	3.91
Z855						
Terminals 1-2	-4.97	507	-	-	1000	0.10
Terminals 3-4	-4.97	507	-	-	1000	0.10
Terminals 1-4	-	-	5.97	1014	128	0.02
Z857						
Terminals 1-2	-7.30	745	-	-	12.3	0.03

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Terminals 3-4	-7.30	745	-	-	12.3	0.03
Terminals 1-4	-	-	8.30	1489	6.89	0.01
Z864						
Terminals 1-2	-11.9	12.1	-	-	1.69	220
Terminals 3-4	-11.9	12.1	-	-	1.69	220
Terminals 1-4	-	-	12.9	24.3	1.28	57.0
Z865						
Terminals 1-2	-15.2	155	-	-	0.76	1.09
Terminals 3-4	-15.2	155	-	-	0.76	1.09
Terminals 1-4	-	-	16.2	309	0.62	0.20
Z865.F						
Terminals 1-2	-15.2	155	-	-	0.76	1.09
Terminals 3-4	-15.2	155	-	-	0.76	1.09
Terminals 1-4	-	-	16.2	309	0.62	0.20
Z872						
Terminals 1-2	-22.7	155	-	-	0.24	1.10
Terminals 3-4	-22.7	155	-	-	0.24	1.10
Z878						
Terminals 1-2	-28.0	46.0	-	-	0.13	15.6
Terminals 3-4	-28.0	46.0	-	-	0.13	15.6
Terminals 1-4	-	-	30.0	93.0	0.11	3.91
Z879						
Terminals 1-2	-28.0	93.0	-	-	0.13	3.91
Terminals 3-4	-28.0	93.0	-	-	0.13	3.91
Z879.F						
Terminals 1-2	-28.0	93.0	-	-	0.13	3.91
Terminals 3-4	-28.0	93.0	-	-	0.13	3.91
Z886						
Terminals 1-2	-28.0	0.0	-	-	0.13	4.29
Terminals 3-4	-28.0	0.0	-	-	0.13	4.29
Terminals 1-4	-	-	30.0	0.0	0.11	4.29
Z887						
Terminals 1-2	-28.0	93.0			0.13	3.91
Terminals 3-4	-28.0	0.0			0.13	4.29
Terminals 1-4			30.0	93.0	0.11	3.91
Z887.F						
Terminals 1-2	-28.0	93.0	-	-	0.13	3.91
Terminals 3-4	-28.0	0.0	-	-	0.13	4.29
Terminals 1-4	-	-	30.0	93.0	0.11	3.91
Z888						

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Terminals 1-2	-28.0	93.0			0.13	3.91
Terminals 3-4	-9.77	200			3.51	0.48
Terminals 1-4			29.0	293	0.12	0.21
Z888.R						
Terminals 1-2	-28.0	93.0			0.13	3.91
Terminals 3-4	-9.77	200			3.51	0.48
Terminals 1-4			29.0	293	0.12	0.21
Z896						
Terminals 1-2	-27.5	87.7			0.15	4.71
Terminals 3-4	-20.8	51.0			0.30	13.6
Terminals 1-4			29.5	139	0.12	1.60
Z905	5.10	520			1000	0.09
Z910	10.3	210			2.89	0.42
Z915	15.5	158			0.71	1.02
Z915.1k	15.5	15.8			0.71	132
Z922						
Terminals 1-2	11.4	225			2.00	0.35
Terminals 3-4	11.4	225			2.00	0.35
Terminals 1-4			12.4	500	1.48	0.12
Z928	28.0	93.0			0.13	3.91
Z954						
Terminals 1-2	5.10	433			1000	0.13
Terminals 3-2	5.10	433			1000	0.13
Terminals 4-2	5.10	433			1000	0.13
Terminals 1, 2, 3, 4			10.2	1300	2.97	0.01
Z955						
Terminals 1-2	5.10	520			1000	0.09
Terminals 3-4	5.10	520			1000	0.09
Terminals 1-4	-	-	10.2	1040	2.99	0.01
Z960						
Terminals 1-2	10.3	210	-	-	2.90	0.42
Terminals 3-4	10.3	210	-	-	2.90	0.42
Terminals 1-4			10.3	419	2.90	0.14
Z960. F						
Terminals 1-2	10.3	210	-	-	2.90	0.42
Terminals 3-4	10.3	210	-	-	2.90	0.42
Terminals 1-4	-	-	10.3	419	2.90	0.14
Z961						
Terminals 1-2	9.0	91.8	-	-	5.01	4.30
Terminals 3-4	9.0	91.8	-	-	5.01	4.30

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Terminals 1-4	-	-	18.0	184	0.43	0.62
Z961.F						
Terminals 1-2	9.0	91.8	-	-	5.01	4.30
Terminals 3-4	9.0	91.8	-	-	5.01	4.30
Terminals 1-4	-	-	18.0	184	0.43	0.62
Z961.H						
Terminals 1-2	9.63	26.3	-	-	4.41	49
Terminals 3-4	9.63	26.3	-	-	4.41	49
Terminals 1-4	-	-	18.5	52.5	0.4	12.88
Z964						
Terminals 1-2	12.4	12.6	-	-	1.45	204
Terminals 3-4	12.4	12.6	-	-	1.45	204
Terminals 1-4	-	-	24.7	25.2	0.18	53.1
Z965						
Terminals 1-2	15.5	158	-	-	0.68	1.02
Terminals 3-4	15.5	158	-	-	0.68	1.02
Terminals 1-4	-	-	15.5	316	0.68	0.19
Z966						
Terminals 1-2	12.4	84.0	-	-	1.45	5.14
Terminals 3-4	12.4	84.0	-	-	1.45	5.14
Terminals 1-4	-	-	24.7	168	0.18	0.83
Z966.F						
Terminals 1-2	12.4	84.0	-	-	1.45	5.14
Terminals 3-4	12.4	84.0	-	-	1.45	5.14
Terminals 1-4	-	-	24.7	168	0.18	0.83
Z966.H						
Terminals 1-2	12.31	167.6	-	-	1.46	0.84
Terminals 3-4	12.31	167.6	-	-	1.46	0.84
Z967						
Terminals 1-2	17.3	147	-	-	0.49	1.31
Terminals 3-4	17.3	147	-	-	0.49	1.31
Terminals 1-4	-	-	17.3	294	0.49	0.21
Z972						
Terminals 1-2	22.7	75.5	-	-	0.23	6.36
Terminals 3-4	22.7	75.5	-	-	0.23	6.36
Terminals 1-4	-	-	22.7	151	0.23	1.19
Z978						
Terminals 1-2	28.0	46.0	-	-	0.13	15.6
Terminals 3-4	28.0	46.0	-	-	0.13	15.6
Terminals 1-4	-	-	30.0	93.0	0.11	3.91

Z Series Zener Barriers
AIS / I,II,III / 1 / CDEFG - 116-0118 / D; Entity
NI / I / 2 / ABCD / T5 Ta = 60°C

Type	V_{oc} *(V)*	I_{sc} *(mA)*	V_t *(V)*	I_t *(mA)*	C_a *(µF)*	L_a *(mH)*
Z726	27.0	159.0	–	–	0.46	6.36
Z728.H	28.0	119.2	–	–	0.40	10.2
Z728.H.F	28.0	119.2	–	–	0.40	10.2
Z772						
Terminals 1-4	–	–	24.7	309	0.58	1.56
Z779						
Terminals 1-4	–	–	30.0	186	0.33	4.39
Z779.F						
Terminals 1-4	–	–	30.0	186	0.33	4.39
Z779.H						
Terminals 1-2	28.0	119.2	–	–	0.4	10.2
Terminals 3-4	28.0	119.2	–	–	0.4	10.2
Terminals 1-4	–	–	30.0	235.5	0.33	2.67
Z779.H.F						
Terminals 1-2, 3-4	28.0	119.2	–	–	0.40	10.2
Terminals 1-4	–	–	30.0	235.5	0.33	2.67
Z787.H						
Terminals 1-2	28.0	119.2	–	–	0.4	10.2
Terminals 3-4	28.0	0	–	–	0.4	78.9
Terminals 1-4	–	–	30.0	119.2	0.33	10.2
Z787.H.F						
Terminals 1-2	28.0	119.2	–	–	0.40	10.2
Terminals 3-4	28.0	0.0	–	–	0.40	78.9
Terminals 1-4	–	–	30.0	119.2	0.33	10.2
Z788.H						
Terminals 1-2	28.0	119.2	–	–	0.4	10.2
Terminals 3-4	9.78	199.6	–	–	10.5	4.08
Terminals 1-4	–	–	30.0	321.8	0.33	1.40
Z788.R.H						
Terminals 1-2	28.0	119.2	–	–	0.4	10.2
Terminals 3-4	9.78	199.6	–	–	10.5	4.08
Terminals 1-4	–	–	30.0	321.8	0.33	1.4
Z828.H	-28.0	119.2	–	–	0.4	10.2
Z828.H.F	-28.0	119.2	–	–	0.40	10.2
Z872						
Terminals 1-4	–	–	24.7	309	0.58	1.56
Z879						

Type	V_{oc} (V)	I_{sc} (mA)	V_t (V)	I_t (mA)	C_a (µF)	L_a (mH)
Terminals 1-4	–	–	30.0	186	0.33	4.39
Z879.F						
Terminals 1-4	–	–	30.0	186	0.33	4.39
Z879.H						
Terminals 1-2	-28.0	119.2	–	–	0.4	102
Terminals 3-4	-28.0	119.2	–	–	0.4	102
Terminals 1-4	–	–	30.0	235.5	0.33	2.67
Z879.H.F						
Terminals 1-2, 3-4	-28.0	119.2	–	–	0.40	10.2
Terminals 1-4	–	–	30.0	235.5	0.33	2.67
Z887.H						
Terminals 1-2	-28.0	119.2	–	–	0.4	10.2
Terminals 3-4	-28.0	0	–	–	0.4	78.9
Terminals 1-4	–	–	30.0	119.2	0.33	10.2
Z887.H.F						
Terminals 1-2	-28.0	119.2	–	–	0.40	10.2
Terminals 3-4	-28.0	0.0	–	–	0.40	78.9
Terminals 1-4	–	–	30.0	119.2	0.33	10.2
Z888.H						
Terminals 1-2	-28.0	119.2	–	–	0.4	10.2
Terminals 3-4	-9.78	199.6	–	–	10.5	4.08
Terminals 1-4	–	–	30.0	321.8	0.33	1.4
Z888.R.H						
Terminals 1-2	-28.0	119.2	–	–	0.4	10.2
Terminals 3-4	-9.78	199.6	–	–	10.51	4.08
Terminals 1-4	–	–	30.0	321.8	0.33	1.4
Z966.H						
Terminals 1-4	–	–	24.63	335.1	0.56	

Equipment Ratings:

Intrinsically safe outputs for connection to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G, Entity when in stalled in accordance with drawing number 116-0118 Revision D. Nonincendive for use in Class I, Division 2 Groups A, B, C and D, temperature class T4, Ta = 60°C

FM Approved for:

Pepperl+Fuchs GmbH
Lancashire, Oldham United Kingdom

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3610	2010
Class 3600	2011
Class 3611	2004
Class 3810	1989

Original Project ID: 2Y2A0.AX Approval Granted: June 15, 1995

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3001101	980619		
3003935	990304		
3003561	990929		
3049784	June 10, 2015		

FM Approvals LLC

J.E. Marquedant
Manager of Electrical Systems

10 June 2015
Date