



Member of the FM Global Group

FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

MTL7700 Series Shunt Diode Barriers

AIS / I,II,III / 1 / ABCDEFG - SCI-942 Entity; NI / I / 2 / ABCD / T* Ta = *

[I/O] AEx [ia] / IIC - SCI-942 Entity; NI / I / 2 / IIC / T* Ta = *

Entity Parameters:

Single channel barrier to one device with ground return:

Barrier Model Terminals	V _{oc} or U _o (V)	I _{sc} or I _o (mA)	P _o (W)	C _a or C _o (μF)	L _a or L _o (mH)	L _a /R _a or L _o /R _o (μH/Ω)	Division 2/Zone 2 Temp. Code	
							T *	Ta *
MTL7706+ 3 & 4	28	93	0.65	0.83	4.2	56	T4	60°C
MTL7710+/- 3 & 4	10	200	0.5	3.0	0.91	74	T4	60°C
MTL7715+/- 3 & 4	15	150	0.56	0.58	1.45	66	T4	60°C
MTL7715P+/- 3 & 4	15	291	1.09	0.58	0.33	28	T4	60°C
MTL7722+/- 3 & 4	22	147	0.81	0.165	1.45	45	T4	60°C
MTL7728+/-/ac 3 & 4	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7728P+/- 3 & 4	28	119	0.83	0.083	2.51	44	T4	60°C

Dual, three or four channel barrier, each channel to separate devices, with separate ground returns:

Barrier Model Terminals	V_{oc} or U_o (V)	I_{sc} or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T *	Ta *
MTL7707+ 3 & GND	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7707+ 4 & GND	28	0	–	0.083	–	–	T4	60°C
MTL7707P+ 4 & GND	28	0	–	0.083	–	–	T4	60°C
MTL7755ac 3 & GND or 4 & GND	3	300	0.225	100	0.46	145	T4	65°C
MTL7756ac 3 & GND or 4 & GND or 7 & GND	3	300	0.225	100	0.46	145	T4	65°C
MTL7758+/- 3 & GND or 4 & GND	7.5	750	1.4	11.1	0.07	26	T4	60°C
MTL7760ac 3 & GND or 4 & GND	10	200	0.5	3.0	0.91	74	T4	60°C
MTL7761ac 3 & GND or 4 & GND	9	100	0.225	4.9	3.72	163	T4	60°C
MTL7761Pac 3 & GND or 4 & GND	9	26	0.058	4.9	56	613	T4	60°C
MTL7764+/- 3 & GND or 4 & GND	12	12	0.036	1.41	240	1000	T4	60°C
MTL7764ac 3 & GND or 4 & GND	12	12	0.036	1.41	240	1000	T4	60°C
MTL7765ac 3 & GND or 4 & GND	15	150	0.56	0.58	1.45	66	T4	60°C
MTL7766ac 3 & GND or 4 & GND	12	80	0.24	1.41	5.8	151	T4	60°C
MTL7766Pac 3 & GND or 4 & GND	12	157	0.471	1.41	1.47	78	T4	60°C
MTL7767+/- 3 & GND or 4 & GND	15	150	0.56	0.58	1.45	66	T4	60°C
MTL7778ac 3 & GND or 4 & GND	28	47	0.33	0.083	16	107	T4	60°C

Barrier Model Terminals	V_{oc} or U_o (V)	I_{sc} or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T^*	T_a^*
MTL7779+/- 3 & GND or 4 & GND	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7787+/- 3 & GND	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7787+/- 4 & GND	28	0	–	0.083	–	–	T4	60°C
MTL7787P+/- 3 & GND	28	119	0.83	0.083	2.51	44	T4	60°C
MTL7787P+/- 4 & GND	28	0	–	0.083	–	–	T4	60°C
MTL7788+/- 3 & GND	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7788+/- 4 & GND	10	200	0.5	3.0	0.91	74	T4	60°C
MTL7788R+/- 3 & GND	28	93	0.65	0.083	4.2	56	T4	60°C
MTL7788R+/- 4 & GND	10	200	0.5	3.0	0.91	74	T4	60°C
MTL7789+/- 3 & GND or 7 & GND	28	46.5	0.33	0.083	16	106	T4	60°C
MTL7789+/- 4 & GND or 8 & GND	28	0	–	0.083	–	–	T4	60°C
MTL7796+/- 3 & GND	26	87	0.56	0.1	4.91	64	T4	60°C
MTL7796+/- 4 & GND	20	51	0.26	0.22	13	136	T4	60°C

Dual, three or four channel barrier two channels to same device with or without ground returns:

Barrier Model Terminals	V_t or U_o (V)	I_t or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T^*	T_a^*
MTL7707+ 3 & 4	29.4	93	0.65	0.071	4.2	56	T4	60°C
MTL7741 3 & 4	10	19	0.039	2.86	96	742	T4	60°C
MTL7742 3 & 4	10	19	0.039	2.86	96	742	T4	60°C
MTL7743 3 & 4 or 7 & 8	10	19	0.039	2.86	96	742	T4	60°C
MTL7744 3 & 4 or 7 & 8	10	19	0.039	2.86	96	742	T4	60°C

Barrier Model Terminals	V_t or U_o (V)	I_t or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T^*	T_a^*
MTL7745 3 & 4	10	19	0.039	2.86	96	742	T4	60°C
MTL7755ac 3 & 4	6	600	0.45	40	0.13	69	T4	65°C
MTL7756ac 3 & 4 or 4 & 7 or 3 & 7	6	600	0.45	40	0.13	69	T4	65°C
MTL7758+/- 3 & 4	7.9	1500	2.8	8.8	0.02	10	T4	60°C
MTL7760ac 3 & 4	10	400	1.0	3.0	0.2	35.6	T4	60°C
MTL7761ac 3 & 4	18	200	0.45	0.31	0.91	62	T4	60°C
MTL7761Pac 3 & 4	18	52	0.115	0.31	14	236	T4	60°C
MTL7764+/- 3 & 4	13	24	0.072	1.0	61	360	T4	60°C
MTL7764ac 3 & 4	24	24	0.072	0.125	61	360	T4	60°C
MTL7765ac 3 & 4	15	300	1.12	0.58	0.32	31.6	T4	60°C
MTL7766ac 3 & 4	24	160	0.48	0.125	1.47	58	T4	60°C
MTL7766Pac 3 & 4	24	314	0.942	0.125	0.34	29	T4	60°C
MTL7767+/- 3 & 4	15	300	1.125	0.58	0.32	22	T4	60°C
MTL7778ac 3 & 4	28	93	0.654	0.083	4.2	56	T4	60°C
MTL7787+/- 3 & 4	29.4	93	0.65	0.071	4.2	56	T4	60°C
MTL7787P+/- 3 & 4	28.5	119	0.835	0.078	2.51	44	T4	60°C
MTL7788+/- 3 & 4	28	294	0.92	0.083	0.33	25	T4	60°C
MTL7788R+/- 3 & 4	28	294	0.92	0.083	0.33	25	T4	60°C
MTL7789+/- 3 & 4 or 7 & 8	28	46.5	0.33	0.083	16	106	T4	60°C
MTL7796+/- 3 & 4	26.4	138	0.81	0.096	1.94	34	T4	60°C

Three channel barrier three channel to same device with or without ground return:

Barrier Model Terminals	V_t or U_o (V)	I_t or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T *	Ta *
MTL7756ac 3 & 4 & 7	6	900	0.675	40	0.06	44	T4	65°C

Four channel barrier, four channel to same device, with or without ground return:

Barrier Model Terminals	V_t or U_o (V)	I_t or I_o (mA)	P_o (W)	C_a or C_o (μ F)	L_a or L_o (mH)	L_a/R_a or L_o/R_o (μ H/ Ω)	Division 2/Zone 2 Temp. Code	
							T *	Ta *
MTL7743 3 & 4 & 7 & 8	10	38	0.078	2.73	25	184	T4	60°C
MTL7744 3 & 4 & 7 & 8	10	38	0.078	2.73	25	184	T4	60°C
MTL7789+/- 3 & 4 & 7 & 8	28	93	0.65	0.083	4.2	56	T4	60°C

Special Condition of Use:

1. The MTL7700 Series barriers shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.

AND

MTL7798 Power Feed Module

NI / 1 / 2 / ABCD / T4 Ta = 60°C

NI / 1 / 2 / IIC / T4 Ta = 60°C

Special Conditions of Use:

1. The MTL7798 Power Feed Module shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.

2. The MTL7798 Power Feed Module may be installed with MTL7700 Series Shunt Diode Barriers as auxiliary nonincendive apparatus.

Equipment Ratings:

Associated intrinsically safe apparatus with connections for Class I, II and III, Division 1, applicable Groups A, B, C, D, E, F and G; AEx [ia] IIC per "Entity" requirements in accordance with installation drawing SCI-942 Issue 5; nonincendive for installation in Class I, Division 2, Groups A, B, C and D, T4 at Ta = 60°C or 65°C; Class I, Zone 2, Group IIC, T4 at Ta = 60°C or 65°C hazardous (classified) indoor locations

AND

Nonincendive apparatus for installation in Class I, Division 2, Groups A, B, C and D, T4 at Ta = 60°C or 65°C; Class I, Zone 2, Group IIC, T4 at Ta = 60°C or 65°C hazardous (classified) indoor locations



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FM Approved for:

Measurement Technology Ltd
Doncaster, United Kingdom

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

Class 3600	2011
Class 3610	2010
Class 3611	2004
Class 3810	2005

Original Project ID: 3010737

Approval Granted: October 8, 2001

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3012746	December 28, 2001		
3013001	May 2, 2002		
3014491	July 4, 2002		
3051591	June 15, 2015		

FM Approvals LLC

J.E. Marquedant
Manager of Electrical Systems

15 June 2015

Date