

1 **EU - TYPE EXAMINATION CERTIFICATE**

2 **Safety Device, Controlling Device or Regulating Device intended for use outside a potentially explosive atmosphere but required for or contributing to the safe functioning of Equipment and Protective Systems with respect to the risks of explosion  
Directive 2014/34/EU**

3 EU - Type Examination Certificate Number: **BAS01ATEX7202 – Issue 4**

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **MTL700 Series Shunt Zener Diode Safety Barriers (IIC)**

5 Manufacturer: **Eaton Electric Limited**

6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire LU2 8DL**

7 This re-issued certificate extends EC Type Examination Certificate No. BAS01ATEX7202 to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 The original certificate was issued by The Electrical Equipment Certification Service, Notified Body Number 0600, which retains responsibility for its original documentation. SGS Baseefa, Notified Body Number 1180, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, is responsible only for the additional work relating to this re-issued certificate and any other supplementary certificate it has issued.

The examination and test results are recorded in confidential Report No. See Certificate History

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0: 2012 + A11: 2013 EN 60079-11: 2012**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following :

⊕ II (1) GD [Ex ia Ga] IIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)  
[Ex ia Da] IIIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)

SGS Baseefa Customer Reference No. 0703

Project File No. 16/0371

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*RS Sinclair*

R S SINCLAIR  
TECHNICAL MANAGER

On behalf of SGS Baseefa Limited  
Re-issued 19<sup>th</sup> January 2017 to replace original

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## Schedule

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Certificate Number BAS01ATEX7202 – Issue 4

### 15 Description of Product

The MTL700 Series Shunt Zener Diode Safety Barriers (IIC) are designed to restrict the transfer of energy, from unspecified safe area equipment to intrinsically safe circuits, by limitation of voltage and current. The range consists of single and dual channel barriers covering polarised – positive and negative, non-polarised, non-polarised-star connected barriers and diode return barriers.

The barriers consist of electronic components on a single printed circuit board encapsulated within a moulded plastic enclosure which incorporates a pair of terminals at both the hazardous and non-hazardous area ends and two studs for connection to earth via a busbar. Alternatively the studs can be connected to earth via a spring mounted foot suitable for mounting on a DIN rail.

The barriers are asymmetrical and have a blue label defining the hazardous area terminals.

**For all versions of the MTL700 Shunt Zener Barriers: -**

#### Input Parameters

Single Channel - Terminal 1 wrt 2 (including earth stud)

Dual Channel - Terminal 1 & 2 wrt to earth stud

$$U_m = 253V$$

#### Output Parameters

Single Channel 1 - Terminal 3 wrt 4 (including earth stud)

Dual Channel 1 - Terminal 3 wrt to earth stud

$$U_o = \text{See a or a1 below}$$

$$I_o = \text{See a or a1 below}$$

$$P_o = \text{See a or a1 below}$$

Dual Channel 2 - Terminal 4 wrt to earth stud

$$U_o = \text{See a2 below}$$

$$I_o = \text{See a2 below}$$

$$P_o = \text{See a2 below}$$

Type	Description	DC/AC		$U_o$ (V)	$R_{min}$ ( $\Omega$ )	$I_o$ (mA)	$P_o$ (W)
MTL706	-28V, 300R	-	a	-28	300	93	0.65
MTL707	28V, 300R	+	a1	28	300	93	0.65
	Diode		a2	28	† (see note 4)		
			b	28	300	93	0.65
MTL708	28V, 300R	+	a	28	300	93	0.65
MTL710	10V, 50R	+/-/ac	a	10	50	200	0.50
MTL710P	10V, 33R	+/-	a	10	33.3	300	0.75
MTL715	15V, 100R	+/-	a	15	100	150	0.56
MTL715P	15V, 50R	+	a	15	51.5	291	1.09
MTL722	22V, 150R	+/-	a	22	150	147	0.81
MTL722P	22V, 150R	+	a	22	102.9	214	1.18

Type	Description	DC/AC		U <sub>o</sub> (V)	R <sub>min</sub> (Ω)	I <sub>o</sub> (mA)	P <sub>o</sub> (W)
MTL728	28V, 300R	+/-/ac	a	28	300	93	0.65
MTL728P	28V, 237R	+	a	28	234.6	119	0.83
MTL751	1V, 10R	ac	a1	1	10	100	0.025
	1V, 10R		a2	1	10	100	0.025
			b	1	5	200	0.050
MTL755	3V, 10R	ac	a1	3	10	300	0.225
	3V, 10R		a2	3	10	300	0.225
			b	3	5	600	0.45
			c	6	20	300	0.45
MTL758	7.5V, 10R	+/-	a1	7.5	10	750	1.40
	7.5V, 10R		a2	7.5	10	750	1.40
			b	7.5	5	1,500	2.80
MTL760	10V, 50R	ac*	a1	10	50	200	0.5
	10V, 50R		a2	10	50	200	0.5
			b	10	25	400	1.00
MTL761	9V, 90R	ac	a1	9	90	100	0.225
	9V, 90R		a2	9	90	100	0.225
			b	9	45	200	0.45
			c	18	180	100	0.45
MTL761P	9V, 350R	ac	a1	9	351.5	26	0.058
	9V, 350R		a2	9	351.5	26	0.058
			b	9	175.5	52	0.115
			c	18	702.9	26	0.115
MTL764	12V, 1K	+/-	a1	12	1,000	12	0.036
	12V, 1K		a2	12	1,000	12	0.036
			b	12	500	24	0.072
MTL764	12V, 1K	ac	a1	12	1,000	12	0.036
	12V, 1K		a2	12	1,000	12	0.036
			b	12	500	24	0.072
			c	24	2,000	12	0.072
MTL765	15V, 100R	ac*	a1	15	100	150	0.56
	15V, 100R		a2	15	100	150	0.56
			b	15	50	300	1.125
MTL766	12V, 150R	ac	a1	12	150	80	0.24
	12V, 150R		a2	12	150	80	0.24
			b	12	75	160	0.48
			c	24	300	80	0.48
MTL766P	12V, 75R	ac	a1	12	76.4	157	0.471
	12V, 75R		a2	12	76.4	157	0.471
			b	12	38.2	314	0.942
			c	24	152.9	157	0.942
MTL767	15V, 100R	+/-	a1	15	100	150	0.56
	15V, 100R		a2	15	100	150	0.56
			b	15	50	300	1.125
MTL768	22V, 150R	+/-	a1	22	150	147	0.81
	22V, 150R		a2	22	150	147	0.81
			b	Not permitted ‡ (see note 3)			
MTL772	28V, 300R	ac*	a1	22	300	74	0.404
			a2	22	300	74	0.404
			b	22	150	147	0.808
MTL778	28V, 600R	ac*	a1	28	600	47	0.327
	28V, 600R		a2	28	600	47	0.327
			b	28	300	93	0.654



Type	Description	DC/AC		U <sub>o</sub> (V)	R <sub>min</sub> (Ω)	I <sub>o</sub> (mA)	P <sub>o</sub> (W)
MTL779	28V, 300R	+/-	a1	28	300	93	0.65
	28V, 300R		a2	28	300	93	0.65
			b	Not permitted ‡ (see note 3)			
MTL786	28V (Diode)	+/-	a1	28	† (see note 4)		
	28V (Diode)		a2	28	† (see note 4)		
MTL787	28V, 300R	+/-	a1	28	300	93	0.65
	28V (Diode)		a2	28	† (see note 4)		
			b	28	300	93	0.65
MTL787SP	28V, 237R	+/- (PB)	a1	28	234.6	119	0.835
	28V (Diode)		a2	28	† (see note 4)		
			b	28	234.6	119	0.835
MTL787S	28V, 300R	+	a1	28	300	93	0.65
	28V (Diode)		a2	28	† (see note 4)		
			b	28	300	93	0.65
MTL788	28V, 300R	+/-	a1	28	300	93	0.65
	10V, 50R		a2	10	50	200	0.5
			b	28	42.85	294@12.6V	0.92
MTL788R	28V, 300R	+/-	a1	28	300	93	0.65
	10V, 50R		a2	10	50	200	0.5
			b	28	42.85	294@12.6V	0.92
MTL791	+11V, 51R	positive	a1	11	51.48	214	0.59
	-11V, 51R	negative	b2	11	51.48	214	0.59
			c	22	102.9	214	1.18
MTL796	26V, 300R	+/-	a1	26	300	87	0.56
	20V, 390R		a2	20	390	51	0.26
			b	26	169.56	138@23.4V	0.81

Reference to data in the standard shows that with the maximum output current and voltage as defined in the above table, such a value has a factor of safety of at least 1.5 for Group IIC.

Notes:

- +/- - Shunt zener diode barriers may be of positive or negative polarity dependant on the configuration of the zener diodes. The certification label will detail the exact type.

ac - non-polarised barriers

ac\* - non-polarised star connected

Diode - diode return barrier
- Circuit configuration for output parameters

a - Single channel

a1 - First channel of a dual channel barrier

b - Both channels of a dual channel barrier connected in parallel, with respect to earth.

c - Both channels of a dual channel barrier interconnected, with no earth return.
- The intrinsically safe terminals of two channels of the MTL768 and the MTL779 dual barriers must not be interconnected in Group IIC atmospheres. It is acceptable for these barriers channels to be interconnected in Group IIB/IIA atmospheres.
- The hazardous area terminals of each of the barrier outputs marked † must be considered at the voltage U<sub>o</sub>. This is considered as the theoretical maximum to which a capacitive load across the hazardous area terminals could become charged by leakage through the series blocking diodes. This voltage does not contribute to the output current.

### Load Parameters

The capacitance or either the inductance or the inductance to resistance ratio (L/R) of the load connected to the output terminals must not exceed the following values.

Type	ac/dc		FOS	IIC			IIB**			IIA		
				IIC	C ( $\mu$ F)	L (mH)	L/R ( $\mu$ H/ $\Omega$ )	C ( $\mu$ F)	L (mH)	L/R ( $\mu$ H/ $\Omega$ )	C ( $\mu$ F)	L (mH)
MTL706	+	a	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL707	+	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	-	0.083	-	-	0.65	-	-	2.15	-	-
		b	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL708	+	a	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL710	+/-/ac	a	25	3.0	0.91	74	20	2.72	310	100	7.25	627
MTL710P	+	a	16	3.0	0.38	44	20	1.13	217	100	3.01	433
MTL715	+/-	a	9	0.58	1.45	66	3.55	7.22	263	14	14	544
MTL715P	+	a	4.64	0.58	0.33	28	3.55	0.99	140	14	2.64	280
MTL722	+/-	a	2.29	0.165	1.45	45	1.14	7.22	180	4.2	14	373
MTL722P	+	a	1.57	0.165	0.3	32	1.14	0.9	133	4.2	2.41	268
MTL728	+/- /ac	a	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL728P	+	a	1.51	0.083	2.51	44	0.65	7.53	168	2.15	20.0	354
MTL751	ac	a1	50	100	3.72	1,464	1,000	15	5,540	1,000	31	11,690
		a2	50	100	3.72	1,464	1,000	15	5,540	1,000	31	11,690
		b	25	100	0.96	558	1,000	2.87	2,326	1,000	7.65	4,702
		c	50	100	3.72	732	1,000	15	2,770	1,000	31	5,845
MTL755	ac	a1	16	100	0.46	145	1,000	1.37	722	1,000	3.66	1,442
		a2	16	100	0.46	145	1,000	1.37	722	1,000	3.66	1,442
		b	8	100	0.13	69	1,000	0.39	206	1,000	1.03	548
		c	16	40	0.41	73	1,000	1.23	361	1,000	3.28	721
MTL758	+/-	a1	6.7	11.1	0.07	26	174	0.20	77	1,000	0.54	206
		a2	6.7	11.1	0.07	26	174	0.20	77	1,000	0.54	206
		b	3.3	11.1	0.02	10	174	0.05	30	1,000	0.14	81
MTL760	ac*	a1	25	3.0	0.91	74	20	2.72	310	100	7.25	627
		a2	25	3.0	0.91	74	20	2.72	310	100	7.25	627
		b	12	3.0	0.20	27	20	0.60	82	100	1.61	218
MTL761	ac	a1	50	4.9	3.72	163	40	15	616	500	31	1,299
		a2	50	4.9	3.72	163	40	15	616	500	31	1,299
		b	25	4.9	0.91	62	40	2.72	258	500	7.2	522
		c	6.6	0.31	3.72	81	1.78	15	308	7.6	31	649
MTL761P	ac	a1	200	4.9	56	613	40	208	2,382	500	419	2,778
		a2	200	4.9	56	613	40	208	2,382	500	419	2,778
		b	100	4.9	14	236	40	55	870	500	116	1,747
		c	26	0.31	56	306	1.78	208	1,191	7.6	419	1,389
MTL764	+/-	a1	416	1.41	240	1,000	9	932	1,000	36	1,000	1,000
		a2	416	1.41	240	1,000	9	932	1,000	36	1,000	1,000
		b	208	1.41	61	360	9	226	1,398	36	452	1,500
MTL764	ac	a1	416	1.41	240	1,000	9	932	1,000	36	1,000	1,000
		a2	416	1.41	240	1,000	9	932	1,000	36	1,000	1,000
		b	208	1.41	61	360	9	226	1,398	36	452	1,500
		c	21	0.125	240	500	0.93	932	500	3.35	1,000	500
MTL765	ac*	a1	9	0.58	1.45	66	3.55	7.22	263	14	14	544
		a2	9	0.58	1.45	66	3.55	7.22	263	14	14	544
		b	4.5	0.58	0.32	22	3.55	0.95	108	14	2.54	216



Type	ac/dc		FOS	IIC			IIB**			IIA		
			IIC	C (μF)	L (mH)	L/R (μH/Ω)	C (μF)	L (mH)	L/R (μH/Ω)	C (μF)	L (mH)	L/R (μH/Ω)
MTL766	ac	a1	62	1.41	5.8	151	9	23	556	36	48	1,174
		a2	62	1.41	5.8	151	9	23	556	36	48	1,174
		b	31	1.41	1.47	58	9	4.4	234	36	11	481
		c	3.26	0.125	5.8	75	0.93	23	278	3.35	48	587
MTL766P	ac	a1	31	1.41	1.47	78	9	4.4	313	36	11	664
		a2	31	1.41	1.47	78	9	4.4	313	36	11	664
		b	15	1.41	0.34	29	9	1.02	87	36	2.71	231
		c	1.67	0.125	1.15	39	0.93	3.44	156	3.35	9.1	322
MTL767	+/-	a1	9	0.58	1.45	66	3.55	7.22	263	14	14	544
		a2	9	0.58	1.45	66	3.55	7.22	263	14	14	544
		b	4.5	0.58	0.32	22	3.55	0.95	108	14	2.54	216
MTL768	+/-	a1	2.29	0.165	1.45	45	1.14	7.22	180	4.2	14	373
		a2	2.29	0.165	1.45	45	1.14	7.22	180	4.2	14	373
		b	Not Permitted									
MTL772	ac*	a1	4.5	0.165	6.77	89	1.14	26	325	4.2	55	683
		a2	4.5	0.165	6.77	89	1.14	26	325	4.2	55	683
		b	2.29	0.165	1.45	34	1.14	7.22	135	4.2	14	280
MTL778	ac*	a1	3.83	0.083	16	107	0.65	62	398	2.15	130	789
		a2	3.83	0.083	16	107	0.65	62	398	2.15	130	789
		b	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL779	+/-	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		b	Not Permitted									
MTL786	+/-	a1	-	0.083	-	-	0.65	-	-	2.15	-	-
		a2	-	0.083	-	-	0.65	-	-	2.15	-	-
		b	-	0.083	-	-	0.65	-	-	2.15	-	-
MTL787	+/-	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	-	0.083	-	-	0.65	-	-	2.15	-	-
		b	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL787SP	+	a1	1.51	0.083	2.51	44	0.65	7.53	168	2.15	20.0	354
		a2	-	0.083	-	-	0.65	-	-	2.15	-	-
		b	1.51	0.083	2.51	44	0.65	7.53	168	2.15	20.0	354
MTL787S	+	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	-	0.083	-	-	0.65	-	-	2.15	-	-
		b	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
MTL788	+/-	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	25	3.0	0.91	74	20	2.72	310	100	7.25	627
		b	12	0.083	0.33	25	0.65	0.99	124	2.15	2.64	253
MTL788R	+/-	a1	1.94	0.083	4.2	55	0.65	12.6	210	2.15	33.6	444
		a2	25	3.0	0.91	74	20	2.72	310	100	7.25	627
		b	12	0.083	0.33	25	0.65	0.99	124	2.15	2.64	253
MTL791	+ & -	a1	23	1.97	0.71	63	13.8	2.13	266	60	5.68	536
		a2	23	1.97	0.71	63	13.8	2.13	266	60	5.68	536
		c	1.57	0.165	0.53	32	1.14	1.59	133	4.2	4.25	268
MTL796	+/-	a1	2.47	0.1	4.91	64	0.77	20	239	2.60	40	505
		a2	8.9	0.22	13	136	1.41	51	501	5.50	108	1,014
		b	2.01	0.1	1.94	34	0.77	8.5	136	2.60	16	282

\*\* Group IIB parameters also applicable for associated apparatus [Ex ia Da] IIIC

Notes:

- 1) The above load parameters 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.
- 2) The above parameters are reduced to 50% when both of the two conditions below are given:
  - the total  $L_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $L_o$  value and
  - the total  $C_i$  of the external circuit (excluding the cable) is  $\geq 1\%$  of the  $C_o$  value.

The reduced capacitance of the external circuit (including cable) shall not be greater than  $1\mu\text{F}$  for Groups IIB & IIA and  $600\text{nF}$  for Group IIC.

**16 Report Number**

GB/BAS/ExTR16.0276/00

**17 Specific Conditions of Use**

None

**18 Essential Health and Safety Requirements**

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject	Compliance
1.2.7	Protection against other hazards (LVD type requirements, etc.)	Manufacturer responsibility
1.2.8	Overloading of equipment (protection relays, etc.)	User/Installer responsibility
1.4.1	External effects	User/Installer responsibility
1.4.2	Aggressive substances, etc.	User/Installer responsibility

**19 Drawings and Documents**

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
CI700-8	1 of 1	3	8.16	Label for MTL700 Series Safety Barriers Certified to the ATEX Directive

The above drawing is associated and held with IECEx Certificate No. IECEx BAS 05.0019 Iss. 3, and also associated with ATEX Certificate No. BAS01ATEX7203 Iss. 2.

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
CI700-1* <sup>1</sup>	1 of 1	3	2.96	MTL700 Series Barriers General Assembly
CI700-2* <sup>1</sup>	1 of 1	3	12.00	MTL700 Series Barriers, Diode Pulse and Storage Temperature Test
CI700-4* <sup>1</sup>	1 of 1	1	9.83	Zener Diode Types and Selection Procedure
CI700-5* <sup>1</sup>	1 of 1	4	9.93	MTL700 Series Barriers Alternative Termination and Encapsulation
CI700-7* <sup>1</sup>	1 & 2	1	12.00	DRK700 Earth Foot
CI706-1/2* <sup>2</sup>	1 of 2	6	1.96	Circuit Diagram Parts List & Layout for MTL706
CI706-1/2* <sup>2</sup>	2 of 2	2	1.89	Test Information and Diode Certification Limits for MTL 706
CI707-1* <sup>2</sup>	1 of 2	4	11.95	Circuit Diagram; Parts List; Layout for the MTL707
CI707-1* <sup>2</sup>	2 of 2	2	10.87	Test Information and Diode Certification Limits for MTL 707
CI708-1* <sup>2</sup>	1 of 2	4	11.95	Circuit Diagram; Parts List; Layout for the MTL708

Number	Sheet	Issue	Date	Description
CI708-1* <sup>2</sup>	2 of 2	2	10.87	Test Information and Diode Certification Limits for MTL708
CI710-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for MTL710
CI710-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL710
CI710-2* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for MTL710ac
CI710-2* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL710ac
CI710-22* <sup>2</sup>	2 of 3	2	3.03	MTL710P+ Safety Barrier Circuit Diagram, Parts List & Layout
CI710-22* <sup>2</sup>	3 of 3	1	11.81	MTL710P+ Safety Barrier Circuit Diagram, Parts List & Layout
CI715-1* <sup>2</sup>	1 of 3	2	11.91	Circuit Diagram, Parts List, Layout and Test Procedure for MTL715
CI715-1* <sup>2</sup>	2 of 3	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for MTL715
CI715-1* <sup>2</sup>	3 of 3	1	10.83	Diode Characteristics for the MTL715
CI715-22* <sup>2</sup>	2 of 3	1	11.91	MTL715P Safety Barrier Circuit Diagram, Parts List & Layout
CI715-22* <sup>2</sup>	3 of 3	1	11.91	MTL715P Safety Barrier Circuit Diagram, Parts List & Layout
CI722-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for the MTL722
CI722-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL722
CI722-22* <sup>2</sup>	2 of 3	1	11.91	MTL722P Safety Barrier Circuit Diagram, Parts List & Layout
CI722-22* <sup>2</sup>	3 of 3	1	11.91	MTL722P Safety Barrier Circuit Diagram, Parts List & Layout
CI728-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for MTL728
CI728-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL728
CI728-2* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout, and Test Information for the MTL728ac
CI728-2* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL728ac
CI728-22* <sup>2</sup>	2 of 3	1	11.91	MTL728P Safety Barrier Circuit Diagram, Parts List & Layout
CI728-22* <sup>2</sup>	3 of 3	1	11.91	MTL728P Safety Barrier Circuit Diagram, Parts List & Layout
CI751-1* <sup>2</sup>	1 of 1	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL751ac
CI755-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Procedure for the MTL755ac
CI755-1* <sup>2</sup>	2 of 2	1	9.83	PCB Layout for the MTL755ac
CI758-1* <sup>2</sup>	1 of 2	3	3.90	Circuit Diagram, Parts List, Layout, and Test Information for the MTL758
CI758-1* <sup>2</sup>	2 of 2	1	5.86	Diode Characteristics for the MTL758
CI760-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL760
CI760-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL760
CI761-1* <sup>2</sup>	1 of 2	2	11.91	Circuit Diagram, Parts List, Layout and Test Information for MTL761
CI761-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL761
CI761-22* <sup>2</sup>	2 of 3	2	2.96	MTL761P Safety Barrier Circuit Diagram, Parts List & Layout
CI761-22* <sup>2</sup>	3 of 3	1	11.91	MTL761P Safety Barrier Circuit Diagram, Parts List & Layout
CI764-1* <sup>2</sup>	1 of 2	2	2.96	Circuit Diagram, Parts List, Layout and Test Information for MTL764
CI764-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL764
CI764-2* <sup>2</sup>	1 of 2	2	2.96	Circuit Diagram, Parts List, Layout and Test Information for MTL764ac



Number	Sheet	Issue	Date	Description
CI764-2* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL764ac
CI765-1* <sup>2</sup>	1 of 3	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL765
CI765-1* <sup>2</sup>	2 of 3	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for the MTL765
CI765-1* <sup>2</sup>	3 of 3	1	10.83	Diode Characteristics for MTL765
CI766-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and test Information for MTL766
CI766-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for MTL766
CI766-22* <sup>2</sup>	2 of 3	1	11.91	MTL766P Safety Barrier Circuit Diagram, Parts List & Layout
CI766-22* <sup>2</sup>	3 of 3	1	11.91	MTL766P Safety Barrier Circuit Diagram, Parts List & Layout
CI767-1* <sup>2</sup>	1 of 2	2	11.91	Circuit Diagram, Parts List, Layout and Test Information for the MTL767
CI767-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL767
CI768-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL768
CI768-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for MTL768
CI772-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL772
CI772-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for MTL772
CI778-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL778
CI778-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for MTL778
CI779-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL779
CI779-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for MTL779
CI786-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL786
CI786-1* <sup>2</sup>	2 of 2	1	9.83	Diode Characteristics for the MTL786
CI787-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL787
CI787-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL787
CI787-2* <sup>2</sup>	1 of 2	3	11.95	Circuit Diagram, Parts List and Layout for the MTL787S
CI787-2* <sup>2</sup>	2 of 2	2	10.87	Test Information and Diode Certification Limits for the MTL787S
CI787-29* <sup>2</sup>	2 of 3	3	11.95	MTL787SP Safety Barrier Circuit Diagram, Parts List and PCB Layout
CI787-29* <sup>2</sup>	3 of 3	1	10.92	MTL787SP Safety Barrier – Test Information and Diode Characteristics
CI788-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout & Test Information for MTL788 & 788R
CI788-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL788 & 788(R)
CI791-1* <sup>2</sup>	2 of 3	3	7.94	MTL791 Fieldbus Barrier Circuit Diagram, Parts List, Label and PCB Layout
CI791-1* <sup>2</sup>	3 of 3	2	4.94	MTL791 Safety Barrier, Test Information and Diode Characteristics
CI796-1* <sup>2</sup>	1 of 2	1	9.83	Circuit Diagram, Parts List, Layout and Test Information for MTL796
CI796-1* <sup>2</sup>	2 of 2	1	10.83	Diode Characteristics for the MTL796

Drawings marked \*<sup>1</sup> are also associated with IECEx Certificate No. IECEx BAS 05.0019 and ATEX Certificate No. BAS01ATEX7203.

Drawings marked \*<sup>2</sup> are also associated with IECEx Certificate No. IECEx BAS 05.0019.

## 20 Certificate History

Certificate No.	Date	Comments
BAS01ATEX7202	20 July 2001	The release of the prime certificate. The associated test and assessment against the requirements of EN 50014: 1997 + Amds 1 & 2 and EN 50020: 1994 is documented in Certification Report No. 00(C)0587.
BAS01ATEX7202/1	25 April 2003	To permit a minor drawing change.
BAS01ATEX7202/2	19 October 2005	To permit Barrier Type MTL702 to be deleted from this certificate.
BAS01ATEX7202/3	28 October 2010	<p>i) To confirm the current designs of the MTL700 Series Shunt Zener Diode Safety Barriers has been reviewed against the requirements of EN 60079-0: 2006 and EN 60079-11: 2007 in respect of the differences from EN 50014: 1997 + Amd. 1 &amp; 2 and EN 50020: 1994 and none of the differences affect this equipment.</p> <p>ii) To permit the additional assessment of the equipment against the requirements for associated apparatus to EN 61241-11: 2005 to Category [Ex ia Da] IIIC (-20°C ≤ T<sub>a</sub> ≤ +60°C).</p> <p>The test and assessment of the above is documented in Certification Report No. GB/BAS/ExTR10.0207/01.</p>
BAS01ATEX7202 Issue 4	12 October 2016	<p>This issue of the certificate incorporates previously issued primary &amp; supplementary certificates into one certificate and confirms the current designs of the equipment meet the requirements of EN 60079-0: 2012 + A11: 2013 &amp; EN 60079-11: 2012 including the revision of the equipment marking in accordance with these standards.</p> <p>This issue of the certificate also permits the manufacturer's name to be changed on page 1 of the certificate and on the equipment marking.</p> <p>The test and assessment of the above is documented in Certification Report No. GB/BAS/ExTR16.0276/00.</p>
For drawings applicable to each issue, see original of that issue.		