1 # EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	EC - Type Examination Certificate Number:	**Baseefa06ATEX0156**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. 05(C)0863/4

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

EN 60079-0: 2004 EN 50020: 2002 IEC 61241-0: 2004 IEC 61241-11: 2005

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 equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

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

12 The marking of the equipment or protective system shall include the following :

Ex **II (1) GD**	**[Ex ia] IIC -20°C ≤ T_a ≤ +60°C [Ex iaD]**
Ex **I (M1)**	**[Ex ia] I**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0703**

Project File No. **05/0863**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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13 **Schedule**

14 **Certificate Number Baseefa06ATEX0156**

15 **Description of Equipment or Protective System**

The MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters is designed to provide a floating d.c. supply for energising two conventional 2 or 3-Wire 4/20mA transmitters or a 'smart' transmitter in the hazardous area and repeat these currents in the non-hazardous area, whilst restricting the transfer of energy from the unspecified non-hazardous area apparatus to the intrinsically safe circuits by the means of limitation of voltage and current. The apparatus also allows bi-directional signal communication between the hazardous and non-hazardous area by the connection of a hand-held communicator (HHC).

The MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters comprises four isolating transformers that provide galvanic isolation between the hazardous and non-hazardous area circuitry, zener diode chains and resistors providing voltage and current limitation. The above, together with other electronic components are mounted on a single printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. All models are fitted with a power indication LED.

The MTL4541* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters is a depopulated version of the MTL4544* and has only one channel populated. Both the MTL4541* and MTL4544* are available in a number of model variants, denoted by the last digit in the model number. All model variants are built on a common PCB.

The following models are covered by this certificate: -

- MTL4541 Single Channel Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters
- MTL4541B Single Channel Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters
- MTL4541P Single Channel Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters
- MTL4544 Dual Channel Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters
- MTL4544B Dual Channel Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters

Input/Output Parameters

MTL4541, MTL4541B, MTL4544 & MTL4544B

Non-Hazardous Area Terminals 8, 9, 11, 12, 13 & 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 8, 9, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 2 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 5 w.r.t. 4 (Channel 2 - MTL4544 / MTL4544B Models Only)

U_o = 28V C_i = 0
I_o = 93mA L_i = 0
P_o = 0.65W

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 6 w.r.t. 4 (MTL4544 / MTL4544B Models Only)

U_o = 1.1V C_i = 0
I_o = 53mA L_i = 0
P_o = 15mW

Hazardous Area Terminals 2 w.r.t. 3 (Channel 1)
Or
Hazardous Area Terminals 5 w.r.t. 6 (Channel 2 – MTL4544 / MTL4544B Models Only)

U_o = 28V C_i = 0
I_o = 87mA L_i = 0
P_o = 0.61W

Each channel must be considered as a separate intrinsically safe circuit.

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area load connected must not exceed the following values for either channel:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1 or 5 w.r.t. 4			
IIC	0.083	4.2	56
IIB	0.65	12.6	210
IIA	2.15	33.6	444
I	3.62	53.7	668
Hazardous Area Terminals 3 w.r.t. 1 or 6 w.r.t 4			
IIC	100	12.8	2,438
IIB	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229
Hazardous Area Terminals 2 w.r.t. 3 or 5 w.r.t 6			
IIC	0.083	5.0	59
IIB	0.65	20.0	222
IIA	2.15	40.9	469
I	3.62	59.1	710

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

Or 2. The inductance and capacitance are distributed as in a cable.

Or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and capacitance, up to 50% of each of the L and C values is allowed.

MTL4541P

Non-Hazardous Area Terminals 8, 9, 11, 12, 13 & 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 8, 9, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 2 w.r.t. 1

U_o = 28V C_i = 0
I_o = 116.6mA L_i = 0
P_o = 0.82W

Hazardous Area Terminals 3 w.r.t. 1

U_o = 1.1V C_i = 0
I_o = 53mA L_i = 0
P_o = 15mW

Hazardous Area Terminals 2 w.r.t. 3

U_o = 28V C_i = 0
I_o = 107mA L_i = 0
P_o = 0.75W

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area load connected must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH) OR	L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1			
IIC	0.083	2.7	45
IIB	0.65	11.8	175
IIA	2.15	23.5	370
I	3.62	33.5	545
Hazardous Area Terminals 3 w.r.t 1			
IIC	100	12.8	2,438
IIB	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229
Hazardous Area Terminals 2 w.r.t. 3			
IIC	0.083	3.2	50
IIB	0.65	13.7	190
IIA	2.15	27.5	401
I	3.62	39.3	596

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance L_i and capacitance C_i greater than 1% of the above values.

Or 2. The inductance and capacitance are distributed as in a cable.

Or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and capacitance, up to 50% of each of the L and C values is allowed.

16 Report Number

05(C)0863/4

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4541-1	1 of 8	1	8.06	Parts List for MTL4541 / MTL4544
CI4541-1	2 of 8	1	08.06	Circuit Diagram for MTL4541 / 4544
CI4541-1	3 of 8	1	08.06	Circuit Diagram for MTL4541 / 4544
CI4541-1	4 of 8	1	8.06	MTL4541 / MTL4544 Track Layout
CI4541-1	5 of 8	1	8.06	MTL4541 Component Layout
CI4541-1	6 of 8	1	8.06	PCB Detail for TPL300
CI4541-1	7 of 8	1	8.06	PCB Detail for TPL301
CI4541-1	8 of 8	1	8.06	MTL4541 Certification Label Details – BASEEFA
CI4500-100	1	1	8.06	MTL4500 Case

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/1**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **07/0088**

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13 # Schedule

14 ## Certificate Number Baseefa06ATEX0156/1

15 **Description of the variation to the Equipment or Protective System**

Variation 1.1

To permit minor changes to the transformer PCB not affecting the original assessment.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4541-1	6 of 8	2	1.07	PCB Detail for TPL300
CI4541-1	7 of 8	2	1.07	PCB Detail for TPL301

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034/1

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/2**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **07/0256**

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13 # Schedule

14 ## Certificate Number Baseefa06ATEX0156/2

15 **Description of the variation to the Equipment or Protective System**

Variation 2.1

To permit minor circuit changes not affecting the original assessment.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4541-1	2 of 8	2	03-07	Circuit Diagram for the MTL 4541 / 4544
CI4541-1	3 of 8	2	03-07	Circuit Diagram for the MTL 4541 / 4544
CI4541-1	5 of 8	2	3.07	MTL4541 Component Layout

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034/2

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/3**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 of 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **07/0414**

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13 # Schedule

14 ## Certificate Number Baseefa06ATEX0156/3

15 **Description of the variation to the Equipment or Protective System**

Variation 3.1

To permit minor changes to the circuit and layout of the PCB.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4541-1	1 of 8	2	7.07	Parts List for MTL4541 / MTL4544
CI4541-1	2 of 8	3	07-07	Circuit Diagram for MTL 4541/4544
CI4541-1	3 of 8	3	07-07	Circuit Diagram for MTL 4541/4544
CI4541-1	4 of 8	2	6.07	MTL4541 / MTL4544 Track Layout
CI4541-1	5 of 8	3	5.07	MTL4541 Component Layout

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034/3

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/4**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 of 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **07/0628**

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13 **Schedule**

14 **Certificate Number Baseefa06ATEX0156/4**

15 **Description of the variation to the Equipment or Protective System**

Variation 4.1

i) To permit the connection of an external intrinsically safe source to hazardous area terminals 3 w.r.t. 1 (Channel 1) and 6 w.r.t. 4 (Channel 2 – where fitted). The associated output parameters on all models become: -

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
or
Hazardous Area Terminals 6 w.r.t 4 (Channel 2 - MTL4544 / MTL4544B models only)

U_o	=	1.1V	U_i	=	30V
I_o	=	53mA	I_i	=	121mA
P_o	=	15mW			
C_i	=	0			
L_i	=	0			

When an intrinsically safe source is connected to these terminals it should have a source resistance of U_i / I_i and the capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area connections must not exceed the values detailed in the certificate of the intrinsically safe source.

Hazardous area terminals 2 and 5 must not be used when the above source is connected to terminals 3 & 6.

ii) To permit minor drawing changes not affecting the original assessment.

iii) To confirm the current design meets the requirements of EN 60079-0: 2006 and EN 60079-11: 2007.

16 **Report Number**

GB/BAS/ExTR07.0122/00

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description	Certificate Supplement No.
CI4541-1	1 of 8	2	7.07	Parts List for MTL4541 / MTL4544	3
CI4541-1	2 of 8	4	09-07	Circuit Diagram for the MTL 4541/4544	4
CI4541-1	3 of 8	4	09-07	Circuit Diagram for the MTL 4541/4544	4
CI4541-1	4 of 8	2	6.07	MTL4541 / MTL4544 Track Layout	3
CI4541-1	5 of 8	4	9.07	MTL4541 Component Layout	4

Number	Sheet	Issue	Date	Description	Certificate Supplement No.
CI4541-1	6 of 8	2	1.07	PCB Detail for TPL300	1
CI4541-1	7 of 8	2	1.07	PCB Detail for TPL301	1
CI4541-1	8 of 8	2	10.07	MTL4541 Certification Label Details - Baseefa	4
CI4500-100	1 of 1	1	8.06	MTL 4500 Case	Original

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034.

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/5**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 of 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Power Court, Luton, Bedfordshire LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **07/0983**

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13 # Schedule

14 ## Certificate Number Baseefa06ATEX0156/5

15 **Description of the variation to the Equipment or Protective System**

Variation 5.1

To permit minor changes to the PCB layout not affecting the previous assessment.

16 **Report Number**

None.

17 **Special Conditions for Safe Use**

None.

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4541-1	4 of 8	3	11.07	MTL4541 / MTL4544 Track Layout

The above drawing is associated and held with IECEx Certificate No. IECEx BAS 06.0034/5.

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/6**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Great Marlings, Butterfield, Luton, Bedfordshire. LU2 8DL** (formerly Power Court, Luton, Bedfordshire LU1 3JJ)

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **09/0356**

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13 **Schedule**

14 **Certificate Number Baseefa06ATEX0156/6**

15 **Description of the variation to the Equipment or Protective System**

Variation 6.1

To permit: -

i) An alternative Printed Circuit Board to be fitted in all models of the apparatus not affecting the original assessment.

ii) Minor drawing changes not affecting the original assessment.

16 **Report Number**

GB/BAS/ExTR09.0124/00

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4541-1	2 of 8	5	07.09	Circuit Diagram for MTL4541/4544
CI4541-1	3 of 8	5	07.09	Circuit Diagram for MTL4541/4544
CI4541-1	4 of 8	4	7.09	MTL4541/MTL4544 Track Layout
CI4541-1	5 of 8	5	7.09	MTL4541 Component Layout
CI4541-1	8 of 8	3	7.09	MTL4541 Certification Label Details – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0036/7

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/7**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Great Marling, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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.

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **10/0363**

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On behalf of
Baseefa

13 **Schedule**

14 **Certificate Number Baseefa06ATEX0156/7**

15 **Description of the variation to the Equipment or Protective System**

Variation 7.1

To permit minor component changes to all models of the equipment not affecting the original assessment.

Variation 7.2

To permit the notes associated with the load parameters of all models specified in the original certificate schedule to be revised. This change does not affect the original assessment of the equipment. The load parameters of the MTL4541, MTL4541B, MTL4541P, MTL4544 & MTL4544B models are as follows: -

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

MTL4541, MTL4541B, MTL4544 & MTL4544B Models Parameters

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1 or 5 w.r.t. 4			
IIC	0.083	4.2	56
IIB*	0.65	12.6	210
IIA	2.15	33.6	444
I	3.62	53.7	668
Hazardous Area Terminals 3 w.r.t. 1 or 6 w.r.t 4			
IIC	100	12.8	2,438
IIB*	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229
Hazardous Area Terminals 2 w.r.t. 3 or 5 w.r.t 6			
IIC	0.083	4.9	59
IIB*	0.65	20.0	222
IIA	2.15	40.9	469
I	3.62	59.1	710

MTL4541P Model Parameters

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1			
IIC	0.083	2.7	45
IIB	0.65	11.8	175
IIA	2.15	23.5	370
I	3.62	33.5	545
Hazardous Area Terminals 3 w.r.t 1			
IIC	100	12.8	2,438
IIB	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 3			
IIC	0.083	3.2	50
IIB	0.65	13.7	190
IIA	2.15	27.5	401
I	3.62	39.3	596

* 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 ≥ 1% of the L_o value and
- the total C_i of the external circuit (excluding the cable) is ≥ 1% of the C_o value.

The reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups IIB, IIA & I and 600nF for Group IIC.

Variation 7.3

To confirm the current design of MTL4541* / MTL4544* Repeater Power Supply, 4.20mA for 2 or 3-Wire Transmitters have been reviewed against the requirements of EN 60079-0: 2009 in respect of the differences from EN 60079-0: 2006 and, with exception of the marking, none of the differences affect this equipment.

The marking of all models of the equipment have been revised as follows in accordance with the requirements of EN 60079-0: 2009 to include the Equipment Protection Level (EPL) markings:

⟨Ex⟩ II (1)GD [Ex ia Ga] IIC (-20°C ≤ T_a ≤ +60°C)
[Ex ia Da] IIIC (-20°C ≤ T_a ≤ +60°C)

⟨Ex⟩ I (M1) [Ex ia Ma] I (-20°C T_a ≤ +60°C)

16 Report Number

GB/BAS/ExTR10.0101/00

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4541-1	1 of 8	3	6.10	Parts List for MTL4541/ MTL4544
CI4541-1	8 of 8	4	5.10	MTL4541 Certification Label Details – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034/8

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**See Schedule**
4	Equipment or protective system:	**See Schedule**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL** (formerly Power Court, Luton, Bedfordshire, LU1 3JJ)

7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

Baseefa Customer Reference No. **0703**

Project File No. **10/0721**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR

DIRECTOR
On behalf of
Baseefa

Baseefa
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ
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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

Schedule

Description of the variation to the Equipment or Protective System

Variation 1.

To permit the alternative fitting of 1SMB3EZ** zener diodes in place of 1SMB59**BT3 components currently fitted on all models of the equipment. The fitting of these components does not affect the original assessment.

Variation 2.

To permit an alternative method of applying the conformal coating to the PCB's fitted in all models of the equipment. This change does not affect the original assessment.

Certificate No.	Supplement No.	Equipment Type
Baseefa06ATEX0155	6	MTL452* Series Solenoid / Alarm Drivers
Baseefa06ATEX0156	8	MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters
Baseefa09ATEX0155	2	MTL4541S, MTL4544S & MTL4544D Repeater Power Supplies, 4/20mA

Report No.

GB/BAS/ExTR10.0298/00

Special Conditions for Safe Use

None

Essential Health and Safety Requirements

See original certificates

Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 – Alternative Zener Diode (Panjit)
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 – Conformal Coating

The above drawings are held with IECEx Certificate No. IECEx BAS 06.0033 Iss 7.

1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3	Supplementary EC - Type Examination Certificate Number:	**Baseefa06ATEX0156/9**
4	Equipment or Protective System:	**MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters**
5	Manufacturer:	**Measurement Technology Limited**
6	Address:	**Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0156 to apply to equipment or protective systems 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 Item 9 of the original Certificate is replaced by "Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2012 **EN 60079-11: 2012**

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

9 The marking of the equipment has changed from the original Certificate and shall include the following:

⟨Ex⟩ **II (1) GD** **[Ex ia Ga] IIC (-20°C ≤ T_a ≤+60°C)**
[Ex ia Da] IIIC (-20°C ≤ T_a ≤+60°C)

⟨Ex⟩ **I (M1)** **[Ex ia Ma] I (-20°C ≤ T_a ≤+60°C)**

This certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703** Project File No. **13/0105**

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R S SINCLAIR
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa06ATEX0156/9**

15 **Description of the variation to the Equipment or Protective System**

Variation 9.1

To permit minor component and drawing changes not affecting the original assessment.

Variation 9.2

To confirm the current design of the MTL4541* / MTL4544* Repeater Power Supply, 4/20mA for 2 or 3-Wire Transmitters have been reviewed against the requirements of EN 60079-0: 2012 and EN 60079-11: 2012 in respect of the differences from EN 60079-0: 2009, EN 60079-11: 2007 & EN 61241-11: 2006 and none of the differences affect the equipment.

Due to the correction of the permitted capacitance figures for Group I equipment in EN 60079-11: 2012, the load parameters for the MTL4541* & MTL4544* models are revised to the following: -

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

MTL4541, MTL4541B, MTL4544 & MTL4544B Models Parameters

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1 or 5 w.r.t. 4			
IIC	0.083	4.2	56
IIB*	0.65	12.6	210
IIA	2.15	33.6	444
I	3.76	53.7	668
Hazardous Area Terminals 3 w.r.t. 1 or 6 w.r.t 4			
IIC	100	12.8	2,438
IIB*	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229
Hazardous Area Terminals 2 w.r.t. 3 or 5 w.r.t 6			
IIC	0.083	4.9	59
IIB*	0.65	20.0	222
IIA	2.15	40.9	469
I	3.76	59.1	710

MTL4541P Model Parameters

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1			
IIC	0.083	2.7	45
IIB*	0.65	11.8	175
IIA	2.15	23.5	370
I	3.76	33.5	545
Hazardous Area Terminals 3 w.r.t 1			
IIC	100	12.8	2,438
IIB*	1,000	47.8	8,932
IIA	1,000	104.7	18,140
I	1,000	156.2	28,229

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 3			
IIC	0.083	3.2	50
IIB	0.65	13.7	190
IIA	2.15	27.5	401
I	3.76	39.3	596

* 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 ≥1% of the L_o value and
   - the total C_i of the external circuit (excluding the cable) is ≥1% of the C_o value.

   The reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups IIB, IIA & I and 600nF for Group IIC.

16 Report Number

GB/BAS/ExTR14.0043/00

17 Specific Conditions of Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4500-100	1 of 1	2	1.13	MTL 4500 Case
CI4541-1	5 of 8	6	1.13	MTL4541 Component Layout

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0034 Iss. 10