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: **SGS23ATEX0021**

4 Product: **MTL4500 & MTL5500 Series Galvanic Isolators – Miscellaneous modules**

5 Manufacturer: **Eaton Electric Limited**

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

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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. **GB/BAS/ExTR23.0021/00**

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

EN IEC 60079-0: 2018 **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 ≤ Ta ≤ +60°C)**
[Ex ia Da] IIIC **(-20°C ≤ Ta ≤ +60°C)**

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

SGS Fimko Oy Customer Reference No. **0703** Project File No. **22/0560**

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13 Schedule 1 – MTL4573 & MTL4573Y Temperature Converter

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4573 & MTL4573Y Temperature Converters are designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4573 & MTL4573Y Temperature Converters are designed for connection to thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. An optional cold junction compensation (CJC) plug can be fitted to the hazardous area connections which alters the internal connections and affects the output parameters.

The apparatus comprises an isolating transformer, an opto-isolator, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

The MTL4573Y Temperature Converter differs from the MTL4573 with regard to the configuration of the non-hazardous area circuitry. In terms of intrinsic safety, both are identical.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 1 to 6 (forming part of the same intrinsically safe circuit)

U_o	=	6.6V	C_i	=	0
I_o	=	76mA	L_i	=	0
P_o	=	0.13W			

Hazardous Area Terminals 3 w.r.t. 1 (WITHOUT the Cold Junction Compensation (CJC) plug fitted)

U_o	=	1.1V	C_i	=	0
I_o	=	7mA	L_i	=	0
P_o	=	2mW			

Hazardous Area Terminals 3, 2 & 1 (with or without CJC plug fitted)

U_o	=	6.6V	C_i	=	0
I_o	=	10mA	L_i	=	0
P_o	=	17mW			

Programming / Configuration Port (Jack Socket)

U_o = 8V U_i = 9.1V
I_o = 14.6mA
P_o = 26mW
C_i = 0
L_i = 0

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load connected to hazardous area terminals 1 to 6 and the programming / configuration port must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 1 to 6			
IIC	22	6.42	288
IIB*	500	25.6	1,057
IIA	1,000	53.0	2,228
I	1,000	77.2	3,402
Programming / Configuration Port (Jack Socket)			
IIC	0.367	153	349
IIB*	2.15	591	1,355
IIA	8.8	1,000	1,453
I	12.32	1,000	1,453

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4500-100	1 of 1	2	1.13	MTL 4500 Case
CI4573-1	1 of 1	2	10.14	Circuit Diagram for MTL4573
CI4573-2	1 to 3	2	10.14	MTL4573 Parts List
CI4573-3	1 of 1	2	10.14	MTL4573 Track Layout
CI4573-4	1 & 2	2	10.14	MTL4573 Component Assembly
CI4573-5	1 of 1	4	2.23	MTL4573 Certification Label Details – Baseefa – Ex i
CI4573-6	1 of 1	1	10.13	PCB Detail for TPL301

The above drawings are associated with BAS23UKEX0028 and held with IECEx BAS 23.0015.

For certificate history for MTL4573 & MTL4573Y Temperature Converter, see Baseefa14ATEX0157 Issue 2.

13 Schedule 2 - MTL4575 Temperature Converter

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4575 Temperature Converter is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4575 Temperature converter is designed for connection to thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. An optional cold junction compensation plug can be fitted to the hazardous area connections, which alters the internal connections and affects the output parameters.

The apparatus comprises an isolating transformer, an opto-isolator, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

Input/Output Parameters

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 1 to 6 (forming part of the same intrinsically safe circuit)

U_o = 6.6V C_i = 0
I_o = 76mA L_i = 0
P_o = 0.13W

Hazardous Area Terminals 3 w.r.t 1 (WITHOUT the Cold Junction Compensation (CJC) plug fitted)

U_o = 1.1V C_i = 0
I_o = 7mA L_i = 0
P_o = 2mW

Hazardous Area Terminals 3, 2 & 1 (with or without CJC plug fitted)

U_o = 6.6V C_i = 0
I_o = 10mA L_i = 0
P_o = 17mW

Programming / Configuration Port (Jack Socket)

U_o = 8V U_i = 9.1V
I_o = 14.6mA
P_o = 26mW
C_i = 0
L_i = 0

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load connected to hazardous area terminals 1 to 6 and the programming / configuration port must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 1 to 6			
IIC	22	6.42	288
IIB*	500	25.6	1,057
IIA	1,000	53.0	2,228
I	1,000	77.2	3,402
Programming / Configuration Port (Jack Socket)			
IIC	0.367	153	349
IIB*	2.15	591	1,355
IIA	8.8	1,000	1,453
I	12.32	1,000	1,453

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4575-1	1 of 6	1	11.06	Parts List for MTL4575
CI4575-1	2 of 6	2	05.07	Circuit Diagram for the MTL4575
CI4575-1	3 of 6	2	6.07	MTL4575 Track Layout
CI4575-1	4 of 6	3	10.12	MTL4575 Component Layout

Number	Sheet	Issue	Date	Description
CI4575-1	5 of 6	2	1.07	PCB Detail for TPL301
CI4575-1	6 of 6	6	2.23	MTL4575 Certification Label Details - Baseefa
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
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx BAS 23.0015.
For certificate history for MTL4575 Temperature Converter, see Baseefa06ATEX0200 Issue 6.

Schedule 3 - MTL4576 Two Channel & MTL4575B Single Channel Temperature Converter

13

Certificate Number SGS23ATEX0021

14

15 Description of Product

The MTL4576 Two Channel Temperature Converter is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either up to two thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4576 Two Channel Temperature Converter is designed for connection of thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. The apparatus comprises an isolating transformer, opto-isolators, duplicated zener diodes chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

The MTL4575B Single Channel Temperature Converter comprises the same circuitry and enclosure as the MTL4576, the only difference being is it only has one channel for the connection of thermocouples or two, three or four wire RTD's situated in the hazardous area. In terms of intrinsic safety, both the MTL4576 & MTL4575B are identical.

Input/Output Parameters

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 1, 2, 3 & 4 (forming part of the same intrinsically safe circuit)

U_o = 6.6V C_i = 0
I_o = 42mA L_i = 0
P_o = 69.3mW

Hazardous Area Terminals 1, 2 & 3 (Channel 1)
or
Hazardous Area Terminals 4, 5 & 6 (Channel 2 – MTL4576 model only)

U_o = 6.6V C_i = 0
I_o = 28mA L_i = 0
P_o = 46.2mW

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
or
Hazardous Area Terminals 6 w.r.t. 4 (Channel 2 – MTL4576 model only)

U_o = 1.2V U_i = 5V
I_o = 4mA C_i = 0
P_o = 1.2mW L_i = 0

Programming / Configuration Port (Jack Socket)

U_o	=	6.68V	U_i	=	9.1V
I_o	=	12mA	C_i	=	0
P_o	=	17.7mW	L_i	=	0

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

GROUP	CAPACITANCE (µF)	INDUCTANCE OR (mH)	L/R RATIO (µH/ohm)
Hazardous area terminals 1, 2, 3 & 4 (forming part of the same intrinsically safe circuit)			
IIC	22.0	20.1	513
IIB*	500	80.6	2,052
IIA	1,000	161.2	4,104
I	1,000	264.5	6,363
Hazardous area terminals 1, 2 & 3 (Channel 1) or terminals 4, 5 & 6 (Channel 2 – MTL4576 only)			
IIC	11.0	22.6	384
IIB*	250	90.7	1,539
IIA	500	181.4	2,121
I	500	297.6	2,121
Hazardous area terminals 3 w.r.t. 1 (channel 1) or terminals 6 w.r.t. 4 (Channel 2 – MTL4576 only)			
IIC	50	500	1,666
IIB*	500	500	1,666
IIA	500	500	1,666
I	500	500	1,666
Programming / Configuration Port (Jack Socket)			
IIC	0.478	79.4	448
IIB*	2.88	317.9	1,412
IIA	11.6	635.8	1,412
I	15.8	1,000	1,412

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4576-1	1 of 7	1	6.09	Parts List for MTL4576
CI4576-1	2 of 7	2	8.09	Certification Drawing for MTL4576 & 5576
CI4576-1	3 of 7	2	8.09	Certification Drawing for MTL4576 & 5576
CI4576-1	4 of 7	2	10.09	MTL4576 Track Layout
CI4576-1	5 of 7	3	1.13	MTL4576 Component Layout
CI4576-1	6 of 7	1	5.09	PCB Detail for TPL301
CI4576-1	7 of 7	5	2.23	MTL4576 Certification Label Details - Baseefa
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
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx BAS 23.0015.
For certificate history for MTL4576 Two Channel & MTL4575B Single Channel Temperature Converter, see Baseefa09ATEX0117 Issue 4.

13 Schedule 4 – MTL4581 Millivolt / Thermocouple Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4581 Millivolt / Thermocouple Isolator are designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a low-level d.c. signal from a voltage source or thermocouple located in the hazardous area by limitation of voltage and current. Two transformers provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4581 Millivolt / Thermocouple Isolator are designed for connection to a low level d.c. signal from a voltage source of thermocouple situated in the hazardous area. The equipment isolates and passes the signal to the receiving equipment located in the non-hazardous area.

The apparatus comprises two isolating transformers, duplicated zener diodes and current limiting resistors to provide 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.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 1 & 2

U_o	=	1.1V	U_i	=	28V	C_i	= 0
I_o	=	53mA	I_i	=	120mA	L_i	= 0.5mH
P_o	=	15mW					

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 1 & 2 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

When an external 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.

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	100	12.3	2,438
IIB*	1,000	47.3	8,932
IIA	1,000	104.2	18,140
I	1,000	155.7	28,229

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4581-1	1 of 8	2	7.11	Parts List for MTL4581 & MTL5581
CI4581-1	2 of 8	2	7.11	MTL4581 & MTL5581 Circuit Diagram
CI4581-1	3 of 8	3	3.14	MTL4581 & MTL5581 Circuit Diagram
CI4581-1	4 of 8	2	7.11	MTL4581 & MTL5581 Track Layout
CI4581-1	5 of 8	4	9.16	MTL4581 & MTL5581 Component Layout
CI4581-1	6 of 8	1	3.11	PCB Detail for TPL300 and TPL302
CI4581-1	7 of 8	1	3.11	PCB Detail for TPL301
CI4581-1	8 of 8	4	2.23	MTL4581 Certification Label Details - Baseefa
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx BAS 23.0015.

For certificate history for MTL4581 Millivolt / Thermocouple Isolator, see Baseefa11ATEX0037 Issue 3.

13 Schedule 5 – MTL4582B Resistance Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4582B Resistance Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a Resistance Temperature Device (RTD) or other resistance located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4582B Resistance Isolator is designed for the connection to a 2-wire, 3-wire or 4-wire RTD or other resistance situated in the hazardous area. The equipment repeats the resistance on the non-hazardous area output terminals for connection to a monitoring system.

The apparatus comprises an isolating transformer, opto-isolator, duplicated zener diodes and current limiting resistors to provide 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. A jack socket is provided for connection of a suitably certified data terminal for programming the equipment. An LED is fitted to provide power on indication.

Input / Output Parameters

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 1, 3, 4 & 5

U_o	=	6.51V	C_i	=	0
I_o	=	10mA	L_i	=	0
P_o	=	16.1mW			

Hazardous Area Terminals 1, 3 & 4

U_o	=	6.51V	C_i	=	0
I_o	=	6mA	L_i	=	0
P_o	=	9.2mW			

Hazardous Area Terminals 3 w.r.t. 1

U_o	=	1.2V	U_i	=	5V
I_o	=	4mA	C_i	=	0
P_o	=	1.2mW	L_i	=	0

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

Programming / Configuration Port (Jack Socket)

U_o	=	6.68V	U_i	=	9.1V
I_o	=	12mA	C_i	=	0
P_o	=	17.7mW	L_i	=	0

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous area terminals 1, 3, 4 & 5			
IIC	22.0	355.5	1,536
IIB*	500	1,000	1,536
IIA	1,000	1,000	1,536
I	1,000	1,000	1,536
Hazardous area terminals 1, 3 & 4			
IIC	22.0	987.6	921
IIB*	500	1,000	921
IIA	1,000	1,000	921
I	1,000	1,000	921
Hazardous area terminals 3 w.r.t. 1			
IIC	100	1,000	3,333
IIB*	1,000	1,000	3,333
IIA	1,000	1,000	3,333
I	1,000	1,000	3,333
Programming / Configuration Port (Jack Socket)			
IIC	0.478	79.4	448
IIB*	2.88	317.9	1,412
IIA	11.6	635.8	1,412
I	15.8	1,000	1,412

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4500-100	1 of 1	2	1.13	MTL 4500 Case
CI4582B-1	1 & 2	1	2.16	Certification Drawing for MTL4582B
CI4582B-2	1 to 3	1	2.16	MTL4582B Parts List
CI4582B-3	1 of 1	1	2.16	MTL4582B Track Layout
CI4582B-4	1 of 1	1	2.16	MTL5582B Component Layout
CI4582B-5	1 of 1	3	2.23	MTL4582B Certification Label Details – Baseefa – Ex i
CI4582B-7	1 of 1	1	9.15	PCB Detail for TPL301

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL4582B Resistance Isolator, see Baseefa15ATEX0195 Issue 1.

Schedule 6 – MTL4531 Single Channel & MTL4533 Two Channel Vibration Transducer Interfaces

13

14 **Certificate Number SGS23ATEX0021**

15 Description of Product

The MTL4533 Two Channel Vibration Transducer Interface is designed to restrict the transfer of energy from unspecified apparatus in the non-hazardous area to up to two intrinsically safe vibration transducers by limitation of voltage and current. Two transformers and two optoisolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The apparatus comprises two isolating transformer, two opto-isolators and detection circuits with zener diode and resistor combinations to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

The MTL4531 Single Channel Vibration Transducer Interface is a depopulated version of the MTL4533 with only one channel populated.

Input/Output Parameters

Non-Hazardous Area Terminals 7, 8, 11, 12, 13 & 14)

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 7, 8, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 6 w.r.t. 4 (Channel 2 – MTL4533 model only)

U_o	=	26.6V	C_i	=	0
I_o	=	86mA	L_i	=	0
P_o	=	0.66W			

Hazardous Area Terminals 3 w.r.t. 2 (Channel 1)
Or
Hazardous Area Terminals 6 w.r.t. 5 (Channel 2 – MTL4533 model only)

U_o	=	1.1V	U_i	=	28V
I_o	=	0.11mA	C_i	=	0
P_o	=	0.03mW	L_i	=	0

Although the apparatus does not itself comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when each hazardous area channel is connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

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

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 3 w.r.t. 1 or Terminals 6 w.r.t. 4 (MTL4533 only)			
IIC	0.094	4.02	56
IIB*	0.73	16.09	227
IIA	2.42	32.19	455
I	4.27	52.81	746
Hazardous Area Terminals 3 w.r.t. 2 or Terminals 6 w.r.t. 5 (MTL4533 only)			
IIC	100	1,000	1,000
IIB*	1,000	1,000	1,000
IIA	1,000	1,000	1,000
I	1,000	1,000	1,000

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4533-1	1 of 8	2	10.09	Parts List for MTL4531 & MTL4533
CI4533-1	2 of 8	2	10.09	MTL4533 Circuit Diagram Safe Area
CI4533-1	3 of 8	2	10.09	MTL4533 Circuit Diagram Hazardous Area
CI4533-1	4 of 8	2	10.09	Track Layout for MTL4531 and MTL4533
CI4533-1	5 of 8	7	1.17	Component Layout for MTL4531 and MTL4533

Number	Sheet	Issue	Date	Description
CI4533-1	5A of 8	1	1.17	Thermal Pad Details
CI4533-1	6 of 8	1	6.09	PCB Detail for TPL301
CI4533-1	7 of 8	1	6.09	PCB Detail for TPL308
CI4533-1	8 of 8	5	2.23	MTL4533 & MTL4531 Certification Label Details - Baseefa
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
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL4531 Single Channel & MTL4533 Two Channel Vibration Transducer Interfaces, see Baseefa09ATEX0102 Issue 6.

13 Schedule 7 – MTL4532 Pulse Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4532 Pulse Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a switch, proximity detector, current pulse transmitter or voltage pulse transmitter located in the hazardous area by limitation of voltage and current. Transformers, an opto-isolator and a relay provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4532 Pulse Isolator is designed for connection of a switch, proximity detector, current pulse transmitter or voltage pulse transmitter situated in the hazardous area. The apparatus repeats the pulse signals from the apparatus in the hazardous area onto outputs in the non-hazardous area. An alarm circuit provides a relay contact output in the non-hazardous area to indicate a failure.

The apparatus comprises isolating transformers, an opto-isolator, a relay, duplicated zener diodes chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

Input / Output Parameters

Non-Hazardous Area Terminals 7 to 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 7, 8, 9, 10, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Non-hazardous area terminals 11 & 12 are connected to relay contacts which can switch up to 250V r.m.s. or 5A r.m.s. or 100VA.

Hazardous Area Terminals 2 w.r.t. 1, Hazardous Area Terminals 6 w.r.t. 1 or Hazardous Area Terminals 6 w.r.t. 3

U_o = 10.5V C_i = 0
I_o = 14mA L_i = 0
P_o = 37mW

Hazardous Area Terminals 3 w.r.t. 1

U_o = 1.1V U_i = 30V C_i = 0
I_o = 53mA I_i = 100mA L_i = 0
P_o = 15mW

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

When an external 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, 4, 5 and 6 must not be used when the source is connected.

Hazardous Area Terminals 5 w.r.t. 1

U_o = 10.5V C_i = 0
I_o = 1.1mA L_i = 0
P_o = 2.9mW

Hazardous Area Terminals 4 w.r.t. 3

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

Hazardous Area Terminals 4 & 3 w.r.t. 1

U_o = 28V C_i = 0
I_o = 93mA at 28V L_i = 0
I_o = 146mA at 2.9V
P_o = 0.65W

Hazardous Area Terminals 5 & 4 w.r.t. 1

U_o = 28V C_i = 0
I_o = 93mA at 28V L_i = 0
I_o = 94mA at 27.5V
P_o = 0.65W

Programming / Configuration Port (Jack Socket)

U_o = 8V P_o = 27mW C_i = 0
I_o = 15mA U_i = 9.1V L_i = 0

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE OR (mH)	L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1, Hazardous Area Terminals 6 w.r.t. 1 or Hazardous Area Terminals 6 w.r.t. 3			
IIC	2.41	181.4	967
IIB*	16.8	725.6	1,333
IIA	75.0	1,000	1,333
I	95.0	1,000	1,333
Hazardous Area Terminals 3 w.r.t. 1			
IIC	100	12.6	2,439
IIB*	1,000	50.6	9,757
IIA	1,000	101.2	19,515
I	1,000	166.1	32,018
Hazardous Area Terminals 5 w.r.t. 1			
IIC	2.41	1,000	12,313
IIB*	16.8	1,000	49,254
IIA	75.0	1,000	98,508
I	95.0	1,000	161,616
Hazardous Area Terminals 4 w.r.t. 3			
IIC	0.083	4.2	55
IIB*	0.65	12.6	210
IIA	2.15	33.6	444
I	3.76	53.7	668

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 4 & 3 w.r.t. 1			
IIC	0.083	1.66	55
IIB*	0.65	6.67	210
IIA	2.15	13.3	444
I	3.76	21.8	668
Hazardous Area Terminals 5 & 4 w.r.t. 1			
IIC	0.083	4.02	55
IIB*	0.65	16.0	210
IIA	2.15	32.1	444
I	3.76	52.8	668
Programming / Configuration Port (Jack Socket)			
IIC	0.367	60.7	360
IIB*	2.15	243.0	1,441
IIA	8.8	486.1	1,484
I	12.32	797.5	1,484

*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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4532-1	1 of 8	1	12.09	Parts List for MTL4532

Number	Sheet	Issue	Date	Description
CI4532-1	2 of 8	1	12.09	Circuit Diagram for the MTL4532 & MTL5532
CI4532-1	3 of 8	1	12.09	Circuit Diagram for the MTL4532 & MTL5532
CI4532-1	4 of 8	1	12.09	MTL4532 Track Layout
CI4532-1	5 of 8	2	1.13	MTL4532 Component Layout
CI4532-1	6 of 8	1	5.09	PCB Detail for TPL300
CI4532-1	7 of 8	1	5.09	PCB Detail for TPL301
CI4532-1	8 of 8	5	2.23	MTL4532 Certification Label Details - Baseefa
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
CI4500-7	1 of 1	2	1.11	MTL4500 Relay Encapsulant
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL4532 Pulse Isolator, see Baseefa09ATEX0157 Issue 3.

13 Schedule 8 – MTL4561 Two Channel Fire / Smoke Detector Interface

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL4561 Two Channel Fire / Smoke Detector Interface is designed to provide two separate loop-powered interface channels for the connection of fire and smoke detectors located in the hazardous area to unspecified apparatus in the non-hazardous area whilst restricting the transfer of energy from unspecified non-hazardous area apparatus to the intrinsically safe circuits by limitation of voltage and current.

The MTL4561 Two Channel Fire / Smoke Detector Interface comprises two isolating transformers that provide galvanic isolation between the hazardous and non-hazardous area circuitry, fuses, zener diodes and resistors providing voltage and current limitation on each channel. The above, together with other electronic components are mounted on a single printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 2 & 3 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 5 & 6 w.r.t. 4 (Channel 2)

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

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 to either channel of the apparatus must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.083	4.2	56
IIB*	0.65	12.6	210
IIA	2.15	33.6	444
I	3.76	53.7	668

*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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4561-1	1 of 6	1	3.09	Parts List for MTL4561/MTL5561
CI4561-1	2 of 6	2	9.09	MTL4561 and MTL5561 Circuit Diagram
CI4561-1	3 of 6	2	9.09	MTL4561 Track Layout
CI4561-1	4 of 6	3	1.13	MTL4561 Component Layout
CI4561-1	5 of 6	1	3.09	MTL4561 Two Channel Fire/Smoke Detector Interface, Loop-powered Transformer Winding Details
CI4561-1	6 of 6	6	2.23	MTL4561 Certification Label Details - Baseefa
CI4500-2	1 of 1	2	8.09	MTL4500 Series Single Toroid I.S. Transformer
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
CI4500-100	1 of 1	2	1.13	MTL 4500 Case

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL4561 Two Channel Fire / Smoke Detector Interface, see Baseefa09ATEX0026 Issue 4.

13 Schedule 9 – MTL5573 Temperature Converter

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5573 Temperature Converter is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5573 Temperature Converter is designed for connection to thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. An optional cold junction compensation (CJC) plug can be fitted to the hazardous area connections which alters the internal connections and affects the output parameters.

The apparatus comprises an isolating transformer, an opto-isolator, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the equipment.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 1 to 6 (forming part of the same intrinsically safe circuit)

U_o = 6.6V C_i = 0
I_o = 76mA L_i = 0
P_o = 0.13W

Hazardous Area Terminals 3 w.r.t. 1 (WITHOUT the Cold Junction Compensation (CJC) plug fitted)

U_o = 1.1V C_i = 0
I_o = 7mA L_i = 0
P_o = 2mW

Hazardous Area Terminals 3, 2 & 1 (with or without CJC plug fitted)

U_o = 6.6V C_i = 0
I_o = 10mA L_i = 0
P_o = 17mW

Programming / Configuration Port (Jack Socket)

U_o = 8V U_i = 9.1V
I_o = 14.6mA
P_o = 26mW
C_i = 0
L_i = 0

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load connected to hazardous area terminals 1 to 6 and the programming / configuration port must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 1 to 6			
IIC	22	6.42	288
IIB*	500	25.6	1,057
IIA	1,000	53.0	2,228
I	1,000	77.2	3,402
Programming / Configuration Port (Jack Socket)			
IIC	0.367	153	349
IIB*	2.15	591	1,355
IIA	8.8	1,000	1,453
I	12.32	1,000	1,453

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5573-1	1 of 1	4	2.23	MTL5573 Certification Label Details & DIN Rail Fittings – Baseefa – Ex i
CI4573-1	1 of 1	2	10.14	Circuit Diagram for MTL4573
CI4573-2	1 to 3	2	10.14	MTL4573 Parts List

Number	Sheet	Issue	Date	Description
CI4573-3	1 of 1	2	10.14	MTL4573 Track Layout
CI4573-4	1 & 2	2	10.14	MTL4573 Component Assembly
CI4573-6	1 of 1	1	10.13	PCB Detail for TPL301
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5573 Temperature Converter, see Baseefa14ATEX0158 Issue 2.

13 Schedule 10 – MTL5575 Temperature Converter

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5575 Temperature Converter is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5575 Temperature converter is designed for connection to thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. An optional cold junction compensation plug can be fitted to the hazardous area connections, which alters the internal connections and affects the output parameters.

The apparatus comprises an isolating transformer, opto-isolators, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

Input/Output Parameters

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 1 to 6 (forming part of the same intrinsically safe circuit)

U_o = 7.2V C_i = 0
I_o = 76mA L_i = 0
P_o = 0.14W

Hazardous Area Terminals 3 w.r.t 1 (WITHOUT the Cold Junction Compensation (CJC) plug fitted)

U_o = 1.1V C_i = 0
I_o = 7mA L_i = 0
P_o = 2mW

Hazardous Area Terminals 3, 2 & 1 (with or without CJC plug fitted)

U_o = 7.2V C_i = 0
I_o = 10mA L_i = 0
P_o = 18mW

Programming / Configuration Port (Jack Socket)

U_o = 8V U_i = 9.1V
I_o = 14.6mA
P_o = 26mW
C_i = 0
L_i = 0

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load connected to hazardous area terminals 1 to 6 and the programming / configuration port must not exceed the following values: -

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 1 to 6			
IIC	13.5	6.42	263
IIB*	240	25.6	969
IIA	1,000	53.0	2,042
I	1,000	77.2	3,119
Programming / Configuration Port (Jack Socket)			
IIC	0.367	153	349
IIB*	2.15	591	1,355
IIA	8.8	1,000	1,453
I	12.32	1,000	1,453

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5575-1	1 of 1	5	2.23	MTL5575 Certification Label Details & DIN Rail Fittings - Baseefa
CI4575-1	1 of 6	1	11.06	Parts List for MTL4575
CI4575-1	2 of 6	2	05.07	Circuit Diagram for the MTL4575

Number	Sheet	Issue	Date	Description
CI4575-1	3 of 6	2	6.07	MTL4575 Track Layout
CI4575-1	4 of 6	3	10.12	MTL4575 Component Layout
CI4575-1	5 of 6	2	1.07	PCB Detail for TPL301
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 - Alternative Zener Diode (Panjit)
CI4500-5	1 of 1	1	11.10	MTL5500 - Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 - Conformal Coating
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5575 Temperature Converter, see Baseefa07ATEX0216 Issue 3.

Schedule 11 – MTL5576 Two Channel & MTL5575B Single Channel Temperature Converter

13

14 **Certificate Number SGS23ATEX0021**

15 Description of Product

The MTL5576 Two Channel Temperature Converter is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to either up to two thermocouples or RTD's located in the hazardous area by limitation of voltage and current. A transformer and opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5576 Two Channel Temperature Converter is designed for connection of thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area.

The apparatus comprises an isolating transformer, opto-isolators, duplicated zener diodes chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

The MTL5575B Single Channel Temperature Converter comprises the same circuitry and enclosure as the MTL5576, the only difference being is it only has one channel for the connection of thermocouples or two, three or four wire RTD's situated in the hazardous area. In terms of intrinsic safety, both the MTL5576 & MTL5575B are identical.

Input/Output Parameters

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 1, 2, 3 & 4 (forming part of the same intrinsically safe circuit)

U_o = 6.6V C_i = 0
I_o = 42mA L_i = 0
P_o = 69.3mW

Hazardous Area Terminals 1, 2 & 3 (Channel 1)
or
Hazardous Area Terminals 4, 5 & 6 (Channel 2 – MTL5576 model only)

U_o = 6.6V C_i = 0
I_o = 28mA L_i = 0
P_o = 46.2mW

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
or
Hazardous Area Terminals 6 w.r.t. 4 (Channel 2 – MTL5576 model only)

U_o = 1.2V U_i = 5V
I_o = 4mA C_i = 0
P_o = 1.2mW L_i = 0

Programming / Configuration Port (Jack Socket)

U_o	=	6.68V	U_i	=	9.1V
I_o	=	12mA	C_i	=	0
P_o	=	17.7mW	L_i	=	0

The capacitance and either the inductance or the 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 1, 2, 3 & 4 (forming part of the same intrinsically safe circuit)			
IIC	22.0	20.1	513
IIB*	500	80.6	2,052
IIA	1,000	161.2	4,104
I	1,000	264.5	6,363
Hazardous area terminals 1, 2 & 3 (Channel 1) or terminals 4, 5 & 6 (Channel 2 – MTL5576 only)			
IIC	11.0	22.6	384
IIB*	250	90.7	1,539
IIA	500	181.4	2,121
I	500	297.6	2,121
Hazardous area terminals 3 w.r.t. 1 (channel 1) or terminals 6 w.r.t. 4 (Channel 2 – MTL5576 only)			
IIC	50	500	1,666
IIB*	500	500	1,666
IIA	500	500	1,666
I	500	500	1,666
Programming / Configuration Port (Jack Socket)			
IIC	0.478	79.4	448
IIB*	2.88	317.9	1,412
IIA	11.6	635.8	1,412
I	15.8	1,000	1,412

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5576-1	1 of 1	5	2.23	MTL5576 Certification Label Details & DIN Rail Fittings - Baseefa
CI4576-1	1 of 7	1	6.09	Parts List for MTL4576
CI4576-1	2 of 7	2	8.09	Certification Drawing for MTL4576 & 5576
CI4576-1	3 of 7	2	8.09	Certification Drawing for MTL4576 & 5576
CI4576-1	4 of 7	2	10.09	MTL4576 Track Layout
CI4576-1	5 of 7	3	1.13	MTL4576 Component Layout
CI4576-1	6 of 7	1	5.09	PCB Detail for TPL301
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 - Alternative Zener Diode (Panjit)
CI4500-5	1 of 1	1	11.10	MTL5500 - Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 - Conformal Coating
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5576 Two Channel & MTL5575B Single Channel Temperature Converter, see Baseefa09ATEX0118 Issue 4.

13 Schedule 12 – MTL5581 Millivolt / Thermocouple Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5581 Millivolt / Thermocouple Isolator are designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a low-level d.c. signal from a voltage source or thermocouple located in the hazardous area by limitation of voltage and current. Two transformers provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5581 Millivolt / Thermocouple Isolator are designed for connection to a low level d.c. signal from a voltage source of thermocouple situated in the hazardous area.

The apparatus isolates and passes the signal to the receiving equipment located in the non-hazardous area. The equipment comprises two isolating transformers, duplicated zener diodes and current limiting resistors to provide 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.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 1 & 2

U_o	=	1.1V	U_i	=	28V	C_i	= 0
I_o	=	53mA	I_i	=	120mA	L_i	= 0.5mH
P_o	=	15mW					

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 1 & 2 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

When an external 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.

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	100	12.3	2,438
IIB*	1,000	47.3	8,932
IIA	1,000	104.2	18,140
I	1,000	155.7	28,229

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5581-1	1 of 1	4	2.23	MTL5581 Certification Label Details & DIN Rail Fittings - Baseefa
CI4581-1	1 of 8	2	7.11	Parts List for MTL4581 & MTL5581
CI4581-1	2 of 8	2	7.11	MTL4581 & MTL5581 Circuit Diagram
CI4581-1	3 of 8	3	3.14	MTL4581 & MTL5581 Circuit Diagram
CI4581-1	4 of 8	2	7.11	MTL4581 & MTL5581 Track Layout
CI4581-1	5 of 8	4	9.16	MTL4581 & MTL5581 Component Layout
CI4581-1	6 of 8	1	3.11	PCB Detail for TPL300 And TPL302
CI4581-1	7 of 8	1	3.11	PCB Detail for TPL301
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5581 Millivolt / Thermocouple Isolator, see Baseefa11ATEX0038 Issue 3.

13 Schedule 13 – MTL5582 Resistance Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5582 Resistance Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a Resistance Temperature Device (RTD) or other resistance located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5582 Resistance Isolator is designed for connection to a 2-wire, 3-wire or 4-wire RTD or other resistance situated in the hazardous area. The equipment repeats the resistance on the non-hazardous area output terminals for connection to a monitoring system.

The apparatus comprises an isolating transformer, opto-isolator, duplicated zener diodes and current limiting resistors to provide 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. A jack socket is provided for connection of a suitably certified data terminal for programming the equipment.

Input/Output Parameters

Non-Hazardous Area Terminals 9, 10, 11, 12, 13 & 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 9, 10, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 1, 3, 4 & 5

U_o	=	6.6V	C_i	=	0
I_o	=	42mA	L_i	=	0
P_o	=	69.3mW			

Hazardous Area Terminals 1, 3 & 4

U_o	=	6.6V	C_i	=	0
I_o	=	28mA	L_i	=	0
P_o	=	46.2mW			

Hazardous Area Terminals 3 w.r.t. 1

U_o	=	1.2V	U_i	=	5V
I_o	=	4mA	C_i	=	0
P_o	=	1.2mW	L_i	=	0

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

Programming / Configuration Port (Jack Socket)

U_o	=	6.68V	U_i	=	9.1V
I_o	=	12mA	C_i	=	0
P_o	=	17.7mW	L_i	=	0

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous area terminals 1, 3, 4 & 5			
IIC	22.0	20.1	513
IIB*	500	80.6	2,052
IIA	1,000	161.2	4,104
I	1,000	264.5	6,363
Hazardous area terminals 1, 3 & 4			
IIC	22.0	45.3	769
IIB*	500	181.4	3,078
IIA	1,000	362.8	4,242
I	1,000	595.2	4,242
Hazardous area terminals 3 w.r.t. 1			
IIC	100	1,000	3,333
IIB*	1,000	1,000	3,333
IIA	1,000	1,000	3,333
I	1,000	1,000	3,333
Programming / Configuration Port (Jack Socket)			
IIC	0.478	79.4	448
IIB*	2.88	317.9	1,412
IIA	11.6	635.8	1,412
I	15.8	1,000	1,412

*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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4582-1	1 of 7	1	12.10	Parts List for MTL5582
CI4582-1	2 of 7	2	12.10	Certification Drawing for MTL5582
CI4582-1	3 of 7	2	12.10	Certification Drawing for MTL5582
CI4582-1	4 of 7	1	22.12.10	MTL5582 Track Layout
CI4582-1	5 of 7	2	1.13	MTL5582 Component Layout
CI4582-1	6 of 7	1	10.10	PCB Detail for TPL301
CI4582-1	7 of 7	4	2.23	MTL5582 Certification Label Detail & DIN Rail Fittings - Baseefa
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5582 Resistance Isolator, see Baseefa10ATEX0227 Issue 2

13 Schedule 14 – MTL5582B Resistance Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5582B Resistance Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a Resistance Temperature Device (RTD) or other resistance located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5582B Resistance Isolator is designed for the connection to a 2-wire, 3-wire or 4-wire RTD or other resistance situated in the hazardous area. The equipment repeats the resistance on the non-hazardous area output terminals for connection to a monitoring system.

The apparatus comprises an isolating transformer, opto-isolator, duplicated zener diodes and current limiting resistors to provide 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. A jack socket is provided for connection of a suitably certified data terminal for programming the equipment. An LED is fitted to provide power on indication.

Input / Output Parameters

Non-Hazardous Area Terminals 9, 10, 11, 12, 13 & 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 9, 10, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 1, 3, 4 & 5

U_o	=	6.51V	C_i	=	0
I_o	=	10mA	L_i	=	0
P_o	=	16.1mW			

Hazardous Area Terminals 1, 3 & 4

U_o	=	6.51V	C_i	=	0
I_o	=	6mA	L_i	=	0
P_o	=	9.2mW			

Hazardous Area Terminals 3 w.r.t. 1

U_o	=	1.2V	U_i	=	5V
I_o	=	4mA	C_i	=	0
P_o	=	1.2mW	L_i	=	0

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

Programming / Configuration Port (Jack Socket)

U_o	=	6.68V	U_i	=	9.1V
I_o	=	12mA	C_i	=	0
P_o	=	17.7mW	L_i	=	0

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous area terminals 1, 3, 4 & 5			
IIC	22.0	355.5	1,536
IIB*	500	1,000	1,536
IIA	1,000	1,000	1,536
I	1,000	1,000	1,536
Hazardous area terminals 1, 3 & 4			
IIC	22.0	987.6	921
IIB*	500	1,000	921
IIA	1,000	1,000	921
I	1,000	1,000	921
Hazardous area terminals 3 w.r.t. 1			
IIC	100	1,000	3,333
IIB*	1,000	1,000	3,333
IIA	1,000	1,000	3,333
I	1,000	1,000	3,333
Programming / Configuration Port (Jack Socket)			
IIC	0.478	79.4	448
IIB*	2.88	317.9	1,412
IIA	11.6	635.8	1,412
I	15.8	1,000	1,412

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5582B-1	1 of 1	4	2.23	MTL5582B Certification Label Details & DIN Rail Fittings – Baseefa – Ex i
CI4582B-1	1 & 2	1	2.16	Certification Drawing for MTL4582B
CI4582B-2	1 to 3	1	2.16	MTL4582B Parts List
CI4582B-3	1 of 1	1	2.16	MTL4582B Track Layout
CI4582B-4	1 of 1	1	2.16	MTL5582B Component Layout
CI4582B-7	1 of 1	1	9.15	PCB Detail for TPL301
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5582B Resistance Isolator, see Baseefa15ATEX0196 Issue 1.

13 Schedule 15 – MTL5531 Single Channel & MTL5533 Two Channel Vibration Transducer Interfaces

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5533 Two Channel Vibration Transducer Interface is designed to restrict the transfer of energy from unspecified apparatus in the non-hazardous area to up to two intrinsically safe vibration transducers by limitation of voltage and current. Two transformers and two opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The apparatus comprises two isolating transformer, two opto-isolators and detection circuits with zener diode and resistor combinations to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

The MTL5531 Single Channel Vibration Transducer Interface is a depopulated version of the MTL5533 with only one channel populated.

Input/Output Parameters

Non-Hazardous Area Terminals 7, 8, 11, 12, 13 & 14)

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 7, 8, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 3 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 6 w.r.t. 4 (Channel 2 – MTL5533 model only)

U_o	=	26.6V	C_i	=	0
I_o	=	86mA	L_i	=	0
P_o	=	0.66W			

Hazardous Area Terminals 3 w.r.t. 2 (Channel 1)
Or
Hazardous Area Terminals 6 w.r.t. 5 (Channel 2 – MTL5533 model only)

U_o	=	1.1V	U_i	=	28V
I_o	=	0.11mA	C_i	=	0
P_o	=	0.03mW	L_i	=	0

Although the apparatus does not itself comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when each hazardous area channel is connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

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

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
Hazardous Area Terminals 3 w.r.t. 1 or Terminals 6 w.r.t. 4 (MTL5533 only)			
IIC	0.094	4.02	56
IIB*	0.73	16.09	227
IIA	2.42	32.19	455
I	4.27	52.81	746
Hazardous Area Terminals 3 w.r.t. 2 or Terminals 6 w.r.t. 5 (MTL5533 only)			
IIC	100	1,000	1,000
IIB*	1,000	1,000	1,000
IIA	1,000	1,000	1,000
I	1,000	1,000	1,000

* 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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI4533-1	1 of 8	2	10.09	Parts List for MTL4531 & MTL4533
CI4533-1	2 of 8	2	10.09	MTL4533 Circuit Diagram Safe Area
CI4533-1	3 of 8	2	10.09	MTL4533 Circuit Diagram Hazardous Area
CI4533-1	4 of 8	2	10.09	Track Layout for MTL4531 and MTL4533
CI4533-1	5 of 8	7	1.17	Component Layout for MTL4531 and MTL4533

Number	Sheet	Issue	Date	Description
CI4533-1	5A of 8	1	1.17	Thermal Pad Details
CI4533-1	6 of 8	1	6.09	PCB Detail for TPL301
CI4533-1	7 of 8	1	6.09	PCB Detail for TPL308
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 - Alternative Zener Diode (Panjit)
CI4500-5	1 of 1	1	11.10	MTL5500 - Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 - Conformal Coating
CI5500-100	1 of 1	3	1.13	New 5500 Outline
CI5533-1	1 of 1	5	2.23	MTL5533 & MTL5531 Certification Label Details & DIN Rail Fittings - Baseefa

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5531 Single Channel & MTL5533 Two Channel Vibration Transducer Interfaces, see Baseefa09ATEX0103 Issue 6.

13 Schedule 16 – MTL5532 Pulse Isolator

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5532 Pulse Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to a switch, proximity detector, current pulse transmitter or voltage pulse transmitter located in the hazardous area by limitation of voltage and current. Transformers, an opto-isolator and a relay provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5532 Pulse Isolator is designed for connection of a switch, proximity detector, current pulse transmitter or voltage pulse transmitter situated in the hazardous area. The apparatus repeats the pulse signals from the apparatus in the hazardous area onto outputs in the non-hazardous area. An alarm circuit provides a relay contact output in the non-hazardous area to indicate a failure.

The apparatus comprises isolating transformers, an opto-isolator, a relay, duplicated zener diodes chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for the connection of a suitably certified data terminal for programming the apparatus.

Input / Output Parameters

Non-Hazardous Area Terminals 7 to 14

U_m = 253V r.m.s.

The circuit connected to non-hazardous area terminals 7, 8, 9, 10, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Non-hazardous area terminals 11 & 12 are connected to relay contacts which can switch up to 250V r.m.s. or 5A r.m.s. or 100VA.

Hazardous Area Terminals 2 w.r.t. 1, Hazardous Area Terminals 6 w.r.t. 1 or Hazardous Area Terminals 6 w.r.t. 3

U_o = 10.5V C_i = 0
I_o = 14mA L_i = 0
P_o = 37mW

Hazardous Area Terminals 3 w.r.t. 1

U_o = 1.1V U_i = 30V C_i = 0
I_o = 53mA I_i = 100mA L_i = 0
P_o = 15mW

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

When an external 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, 4, 5 and 6 must not be used when the source is connected.

Hazardous Area Terminals 5 w.r.t. 1

U_o = 10.5V C_i = 0
I_o = 1.1mA L_i = 0
P_o = 2.9mW

Hazardous Area Terminals 4 w.r.t. 3

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

Hazardous Area Terminals 4 & 3 w.r.t. 1

U_o = 28V C_i = 0
I_o = 93mA at 28V L_i = 0
I_o = 146mA at 2.9V
P_o = 0.65W

Hazardous Area Terminals 5 & 4 w.r.t. 1

U_o = 28V C_i = 0
I_o = 93mA at 28V L_i = 0
I_o = 94mA at 27.5V
P_o = 0.65W

Programming / Configuration Port (Jack Socket)

U_o = 8V P_o = 27mW C_i = 0
I_o = 15mA U_i = 9.1V L_i = 0

Load Parameters

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

GROUP	CAPACITANCE (µF)	INDUCTANCE OR (mH)	L/R RATIO (µH/ohm)
Hazardous Area Terminals 2 w.r.t. 1, Hazardous Area Terminals 6 w.r.t. 1 or Hazardous Area Terminals 6 w.r.t. 3			
IIC	2.41	181.4	967
IIB*	16.8	725.6	1,333
IIA	75.0	1,000	1,333
I	95.0	1,000	1,333
Hazardous Area Terminals 3 w.r.t. 1			
IIC	100	12.6	2,439
IIB*	1,000	50.6	9,757
IIA	1,000	101.2	19,515
I	1,000	166.1	32,018
Hazardous Area Terminals 5 w.r.t. 1			
IIC	2.41	1,000	12,313
IIB*	16.8	1,000	49,254
IIA	75.0	1,000	98,508
I	95.0	1,000	161,616
Hazardous Area Terminals 4 w.r.t. 3			
IIC	0.083	4.2	55
IIB*	0.65	12.6	210
IIA	2.15	33.6	444

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
I	3.76	53.7	668
Hazardous Area Terminals 4 & 3 w.r.t. 1			
IIC	0.083	1.66	55
IIB*	0.65	6.67	210
IIA	2.15	13.3	444
I	3.76	21.8	668
Hazardous Area Terminals 5 & 4 w.r.t. 1			
IIC	0.083	4.02	55
IIB*	0.65	16.0	210
IIA	2.15	32.1	444
I	3.76	52.8	668
Programming / Configuration Port (Jack Socket)			
IIC	0.367	60.7	360
IIB*	2.15	243.0	1,441
IIA	8.8	486.1	1,484
I	12.32	797.5	1,484

*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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5532-1	1 of 1	5	2.23	MTL5532 Certification Label Details & DIN Rail Fittings - Baseefa
CI4532-1	1 of 8	1	12.09	Parts List for MTL4532
CI4532-1	2 of 8	1	12.09	Circuit Diagram for the MTL4532 & MTL5532
CI4532-1	3 of 8	1	12.09	Circuit Diagram for the MTL4532 & MTL5532
CI4532-1	4 of 8	1	12.09	MTL4532 Track Layout
CI4532-1	5 of 8	2	1.13	MTL4532 Component Layout
CI4532-1	6 of 8	1	5.09	PCB Detail for TPL300
CI4532-1	7 of 8	1	5.09	PCB Detail for TPL301
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 - Alternative Zener Diode (Panjit)
CI4500-5	1 of 1	1	11.10	MTL5500 - Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 - Conformal Coating
CI4500-7	1 of 1	2	1.11	MTL4500 Relay Encapsulant
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5532 Pulse Isolator, see Baseefa09ATEX0158 Issue 3.

13 Schedule 17 – MTL5561 Two Channel Fire / Smoke Detector Interface

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5561 Two Channel Fire / Smoke Detector Interface is designed to provide two separate loop-powered interface channels for the connection of fire and smoke detectors located in the hazardous area to unspecified apparatus in the non-hazardous area whilst restricting the transfer of energy from unspecified non-hazardous area apparatus to the intrinsically safe circuits by limitation of voltage and current.

The MTL5561 Two Channel Fire / Smoke Detector Interface comprises two isolating transformers that provide galvanic isolation between the hazardous and non-hazardous area circuitry, fuses, zener diodes and resistors providing voltage and current limitation on each channel. The above, together with other electronic components are mounted on a single printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

Input/Output Parameters

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

U_m = 253V r.m.s.

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

Hazardous Area Terminals 2 & 3 w.r.t. 1 (Channel 1)
Or
Hazardous Area Terminals 5 & 6 w.r.t. 4 (Channel 2)

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

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 to either channel of the apparatus must not exceed the following values:

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	0.083	4.2		56
IIB*	0.65	12.6		210
IIA	2.15	33.6		444
I	3.76	53.7		668

*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/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5561-1	1 of 1	6	2.23	MTL5561 Certification Label Details & DIN Rail Fittings - Baseefa
CI4561-1	1 of 6	1	3.09	Parts List for MTL4561/MTL5561
CI4561-1	2 of 6	2	9.09	MTL4561 and MTL5561 Circuit Diagram
CI4561-1	3 of 6	2	9.09	MTL4561 Track Layout
CI4561-1	4 of 6	3	1.13	MTL4561 Component Layout
CI4561-1	5 of 6	1	3.09	MTL4561 Two Channel Fire/Smoke Detector Interface, Loop-powered Transformer Winding Details
CI4500-2	1 of 1	2	8.09	MTL4500 Series Single Toroid I.S. Transformer
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 - Alternative Zener Diode (Panjit)
CI4500-5	1 of 1	1	11.10	MTL5500 - Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 - Conformal Coating
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5561 Two Channel Fire / Smoke Detector Interface, see Baseefa09ATEX0027 Issue 4.

13 Schedule 18 – MTL5553 Foundation Fieldbus Isolator / Power Supply

14 Certificate Number SGS23ATEX0021

15 Description of Product

The MTL5553 Foundation Fieldbus Isolator / Power Supply is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to Fieldbus equipment located in the hazardous area by limitation of voltage and current. Two transformers and an opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5553 Foundation Fieldbus Isolator / Power Supply is designed for the connection to Fieldbus devices situated in the hazardous area. The equipment provides power and communication to the Fieldbus devices through the signal conductors for connection to a Fieldbus Network located in the non-hazardous area. Terminals are also provided on the hazardous area side of the equipment to permit the connection of a suitably certified Fieldbus Communicator to permit diagnostics of the Fieldbus network.

The apparatus comprises two isolating transformers, an opto-isolator, duplicated zener diodes and current limiting resistors to provide 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. An LED is fitted to provide power on indication.

Input/Output Parameters

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 2/5 w.r.t. 1/4

U_o = 22V C_i = 0
I_o = 216mA L_i = 0
P_o = 1.2W

Load Parameters

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to the hazardous area terminals 2/5 w.r.t. 1/4 must not exceed the following values: -

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.165	0.26	29
IIB*	1.14	0.79	119
IIA	4.2	2.12	239
I	6.0	9.54	392

*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.

The values of Lo and Co determined by this method shall not be exceeded by the sum of all of the Li plus cable inductances in the circuit and the sum of all of the Ci plus cable capacitances respectively.

16 Report Number

GB/BAS/ExTR23.0021/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5553-1	1 of 1	2	11.18	MTL5553 Fieldbus Isolator Power Supply Parts List
CI5553-2	1 of 1	1	08.18	MTL5553 Fieldbus Isolator Power Supply Assembly
CI5553-3	1 of 1	2	11.18	MTL5553 Track Layout
CI5553-4	1 of 1	1	8.18	MTL5553 Component Layout
CI5553-5	1 of 1	3	2.23	MTL5553 Certification Label Details and DIN Rail Fittings - Baseefa
CI5553-6	1 of 1	1	7.18	MTL5553 Isolator Power Supply Transformer Winding Detail
CI4000-1	1 & 2	2	11.92	MTL 4000 Series 2-Core I.S. Transformer
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated with BAS23UKEX0028 and held with IECEx Certificate No. IECEx BAS 23.0015.

For certificate history for MTL5553 Foundation Fieldbus Isolator / Power Supply, see Baseefa18ATEX0087 Issue 1.