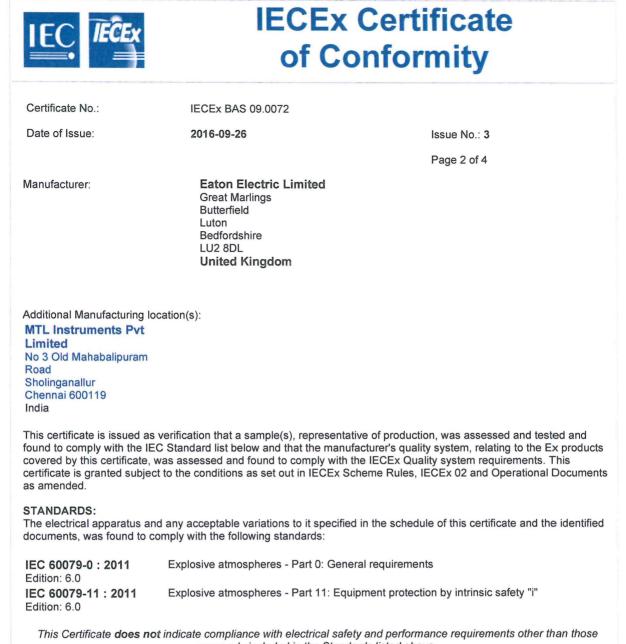


IECEx Certificate of Conformity

	NATIONAL EL ertification Sc for rules and detail		plosive A	tmospheres
Certificate No.:	IECEx BAS 09.0072	į	ssue No.:3	Certificate history: Issue No. 3 (2016-9-26) Issue No. 2 (2014-3-28)
Status:	Current			Issue No. 2 (2014-3-26) Issue No. 1 (2011-1-31) Issue No. 0 (2010-1-29)
Date of Issue:	2016-09-26	Page 1	of 4	
Applicant:	Eaton Electric Lim Great Marlings Butterfield Luton Bedfordshire LU2 8DL United Kingdom	ited		
Equipment: Optional accessory:	MTL4532 Pulse Isola	ator		
Type of Protection:	Intrinsic Safety			
Marking:	[Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia Ma] I -20°C ≤ Ta ≤ +60°C			
Approved for issue on be Certification Body:	ehalf of the IECEx	R. S. Sinclair		
Position:		Technical Manager	. /	
Signature: (for printed version)		RE	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Cari
Date:		2	-1-1	-16
 This certificate and so This certificate is not 1 The Status and authe 	transferable and remain	s the property of the is	ssuing body. iting the Official	IECEx Website.
Rockh Buxton, I	Baseefa Limited ead Business Park Staden Lane Derbyshire, SK17 9RZ nited Kingdom		SG	S Baseefa



expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS: A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report: GB/BAS/ExTR09.0104/00 GB/BAS/ExTR16.0237/00

GB/BAS/ExTR10.0282/00

GB/BAS/ExTR14.0065/00

Quality Assessment Report:

GB/BAS/QAR06.0022/06

GB/BAS/QAR07.0017/05



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2016-09-26

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

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 nonhazardous 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.

See annex for electrical parameters.

CONDITIONS OF CERTIFICATION: NO



IECEx Certificate of Conformity

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2016-09-26

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 3.1

To permit the manufacturer's name to be changed on the certificate and equipment marking. No other changes are made to the equipment design.

ExTR: GB/BAS/ExTR16.0237/00

File Reference: 16/0371

Annex: IECEx BAS 09.0072 Annex Issue 2.pdf



ANNEX to IECEx BAS 09.0072

Issue No. 2

Date: 2014/03/28

MTL4532 Pulse Isolator

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

 $\begin{array}{rcl} U_{o} &=& 10.5 V & & C_{i} &=& 0 \\ I_{o} &=& 14 m A & & L_{i} &=& 0 \\ P_{o} &=& 37 m W \end{array}$

Hazardous Area Terminals 3 w.r.t. 1

Uo	=	1.1V	Ui	=	30V	$C_i = 0$
l _o	=	53mA	l _i	=	100mA	$L_i = 0$
P。	=	15mW				

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of IEC 60079-11: 2006, 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 IEC 60079-11: 2006 to the parameters of the circuit into which it is connected.

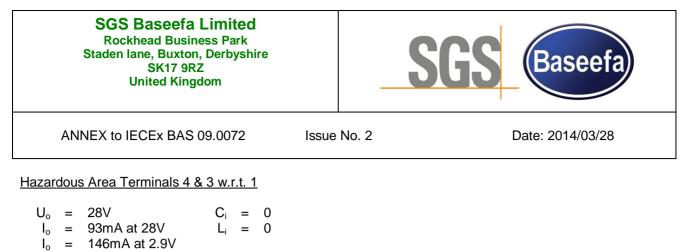
When an external intrinsically safe source is connected to these terminals it should have a source resistance of U_i / I_i and the capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area connections must not exceed the values detailed in the certificate of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

Uo	=	10.5V	Ci	=	0
I _o	=	1.1mA	Li	=	0
P	=	2.9mW			

Hazardous Area Terminals 4 w.r.t. 3

Uo	=	28V	Ci	=	0
l _o	=	93mA	Li	=	0
P_{o}	=	0.65W			



 $P_{o} = 0.65W$

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

 $\begin{array}{rclcrcl} U_{o} &=& 28V & & C_{i} &=& 0\\ I_{o} &=& 93mA \mbox{ at } 28V & & L_{i} &=& 0\\ I_{o} &=& 94mA \mbox{ at } 27.5V & & \\ P_{o} &=& 0.65W & & \\ \end{array}$

Programming / Configuration Port (Jack Socket)

Uo	=	8V	Po	=	27mW	Ci	=	0
l _o	=	15mA	Ui	=	9.1V	Li	=	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 (mH)	OR	L/R RATIO (µH/ohm)			
Hazardous Area Term			6 wrt 1	, , , , , , , , , , , , , , , , , , ,			
Hazardous Area Terminals 2 w.r.t. 1, Hazardous Area Terminals 6 w.r.t. 1 or Hazardous Are 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			
	95.0	1,000		1,333			
Hazardous Area Term	inals 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			
	1,000	166.1		32,018			
Hazardous Area Tern	ninals 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 Tern	ninals 4 w.r.t. 3						
IIC	0.083	4.2		55			
IIB*	0.65	12.6		210			
IIA	2.15	33.6		444			
	3.76	53.7		668			
Hazardous Area Term	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			
	3.76	21.8		668			



ANNEX to IECEx BAS 09.0072

Issue No. 2

Date: 2014/03/28

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
Hazardous Area Termi	inals 5 & 4 w.r.t. 1			
IIC	0.083	4.02		55
IIB*	0.65	16.0		210
IIA	2.15	32.1		444
	3.76	52.8		668
Programming / Config	juration Port (Jack So	cket)		
IIC	0.367	60.7		360
IIB*	2.15	243.0		1,441
IIA	8.8	486.1		1,484
	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 1μ F for Groups IIB, IIA & I and 600nF for Group IIC.