



Health &
Safety
Executive

COPY



BASEEFA

British Approvals Service for Electrical Equipment in Flammable Atmospheres

1. **CERTIFICATE OF CONFORMITY**

2. BAS No Ex 88B2114

3. This certificate is issued for the electrical apparatus:

AN MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY

4. manufactured and submitted for certification by:

MEASUREMENT TECHNOLOGY LIMITED
of Luton, Bedfordshire, LU1 3JJ

5. This electrical apparatus and any acceptable variation thereto is specified in the Schedule to this Certificate and the documents therein referred to.

6. BASEEFA being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EEC) confirms that the apparatus has been found to comply with harmonised European Standards

EN50 014 (1977) + A1 to 4
EN50 020 (1977) + A1

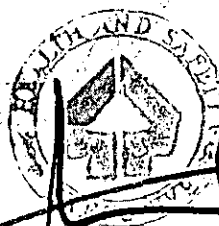
and has successfully met the examination and test requirements which are recorded in confidential Test Report

No 88(i)053 dated 10 March 1988

7. The apparatus marking shall include the code

[EEx ia] IIC
(T_{amb} = 60°C)

File No : EECS 0703/02/017



I.M.
I M CLEARE
DIRECTOR
10 March 1988

M.H.
Sheet 1/4

8. The supplier of the electrical apparatus referred to in this certificate, has the responsibility to ensure that the apparatus conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.

9. This apparatus may be marked with the Distinctive Community Mark specified in Annex II to the Commission Directive of 16 January 1984 (Doc 84/47/EEC). A facsimile of this mark is printed on sheet 1 of this certificate.



NUMBER Ex 88B2114

DATED 10 March 1988

APPARATUS

AN MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY is designed to enable the independent control of three non-hazardous area loads by three switches or certified proximity detectors in a hazardous area and to restrict the transfer of energy from a non-intrinsically safe power source to these circuits by the limitation of voltage and current.

The apparatus comprises four printed circuit boards (PCBs) on which all the electronic components are mounted with the exception of the power supply fuse, housed inside a plastic enclosure which gives a degree of protection of at least IP20.

There are two versions of the apparatus, each with a different power supply requirement and different primary electrical circuit arrangement.

1) Mains voltage version (240/120V a.c.). The primary circuit consists of the component certified Type MTL 2902E mains transformer (Certificate No Ex 802239U) and Primary PCB (Certificate No Ex 822261U).

Terminals 15 and 16, $U_m = 250V$ rms.

2) 24V DC Version : The primary circuit consists of a Component Approved high frequency transformer, MTL 3000 Series Transformer Type TFR42 (Certificate No Ex 85B2325U) and associated over voltage protection circuitry.

Terminals 15 and 16, $U_m = 250V$ rms

The Output Parameters are common to both versions of apparatus.

Terminals 1 and 2, 3 and 4, 5 and 6
 $U_{max:out} = 10.5V$, $I_{max:out} = 14mA$

Terminals 7 and 8
 $U_{max:out} = 10.5V$, $I_{max:out} = 1mA$

The Capacitance and either the Inductance or Inductance to Resistance (L/R) ratio of the load connected to each pair of hazardous terminals must not exceed the following values.

CERTIFICATE OF CONFORMITY



SCHEDULE

NUMBER Ex 88B2114

DATED 10 March 1988

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu\text{H}/\text{ohm}$
IIC	2.4	165		825
IIB	7.2	495		2475
IIA	19.2	1320		6600

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2213-1 Sheet 1	2	Jan 88	Contents sheet
Sheet 2	2	Jan 88	Parts List
Sheet 3	2	Jan 88	Primary Circuits
Sheet 4	2	Jan 88	Secondary Circuits
Sheet 5	2	Jan 88	Primary PCB 24V dc version
Sheet 6	2	Jan 88	Top Board PCB layout
Sheet 7	2	Jan 88	Secondary PCB
Sheet 8	2	Jan 88	General Assembly 240V/120V
Sheet 9	2	Jan 88	General Assembly 24V dc
Sheet 10	2	Jan 88	Label
SK 1033	Original	8.9.87	Eichhoff Relay (normal open contacts)
SK 977	II	8.9.87	Eichhoff Relay (changeover contacts)



Health &
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BASEEFA

British Approvals Service for Electrical Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY VARIATION

THIS IS TO CERTIFY THAT CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114

Issued to **MEASUREMENT TECHNOLOGY LIMITED**
of Luton, Bedfordshire, LU1 3JJ

for the **MIL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY**

is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the following Schedule.

SCHEDULE

VARIATION ONE To permit minor changes to printed circuit board layouts.
Intrinsic safety is not affected.

DRAWINGS
Number

Issue

Date

Description

CI2213-1
sheets 5 & 6

3

4.88

PCB layout

File: EECS 0703/02/017



CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114/1

I M CLEARE
DIRECTOR
20 July 1988

SD

British Approvals Service for Electrical Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY VARIATION

THIS IS TO CERTIFY THAT CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114

Issued to MEASUREMENT TECHNOLOGY LIMITED
of Luton, Bedfordshire
LU1 3JJ

for the MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY

is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the following Schedule.

SCHEDULE

VARIATION TWO To permit the use of an alternative pcb material, PIAD I.G.A.V. FR4 ML.


DRAWINGS

Number	Issue	Date	Description
CI 2213-1	4	5.89	Top PCB Layout

File: EECS 0703/02/017

CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114/2

SD



I.M. CLEARE
DIRECTOR EECS
24 May 1989

British Approvals Service for Electrical Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY VARIATION

THIS IS TO CERTIFY THAT CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114

Held by **MEASUREMENT TECHNOLOGY LIMITED**
of Luton, Bedfordshire,
LU1 3JJ

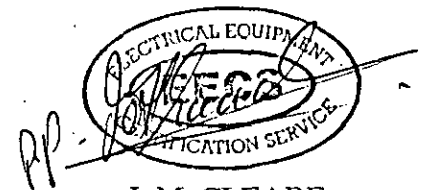
for the **MTL 2213 3 CHANNEL SWITCH/PROXIMITY DETECTOR RELAY**

is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the following Schedule.

Schedule			
VARIATION THREE	To permit minor changes to the printed circuit boards.		
DRAWINGS			
Number	Issue	Date	Description
CI2213-1 Sheet 5 of 10	4	4.90	Primary Board PCB Layout/Artwork
CI2213-1 Sheet 6 of 10	5	4.90	Top Board PCB Artwork
(File: EECS 0703/02/017)			

CERTIFICATE OF CONFORMITY BAS NO Ex 88B2114/3

BA



I M CLEARE
DIRECTOR EECS
31 May 1990



British Approvals Service for Electrical
Equipment in Flammable Atmospheres

Certificate of Conformity Variation

THIS IS TO CERTIFY THAT CERTIFICATE BAS NO Ex 88B2214

Held by **MEASUREMENT TECHNOLOGY LIMITED**
of Luton, Bedfordshire, LU1 3JJ

for the **MTL 2213 3 CHANNEL SWITCH / PROXIMITY
DETECTOR RELAY**

is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the following Schedule.

VARIATION FOUR To permit minor drawing changes. Intrinsic Safety is not affected.

DRAWINGS

Number	Issue	Date	Description
SK 1033	a	July 1986	Eichoff relay

File No: EECS 0703/02/017

CERTIFICATE BAS NO Ex 88B2214/4

CG

[Handwritten signature]
I M CLEARE
DIRECTOR EECS
19 March 1992



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: 0298 26211 Fax: 0298 79514 Telex: 668113 RLSD G





British Approvals Service for Electrical
Equipment in Flammable Atmospheres

Certificate of Conformity Variation

THIS IS TO CERTIFY THAT CERTIFICATE BAS NO Ex 88B2114

Held by MEASUREMENT TECHNOLOGY LTD
of Luton, Bedfordshire, LU1 3JJ

for the MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY

is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the attached Schedule.

File No: EECS 0703/02/017

CERTIFICATE BAS NO Ex 88B2114/5
Sheet 1/2
TD

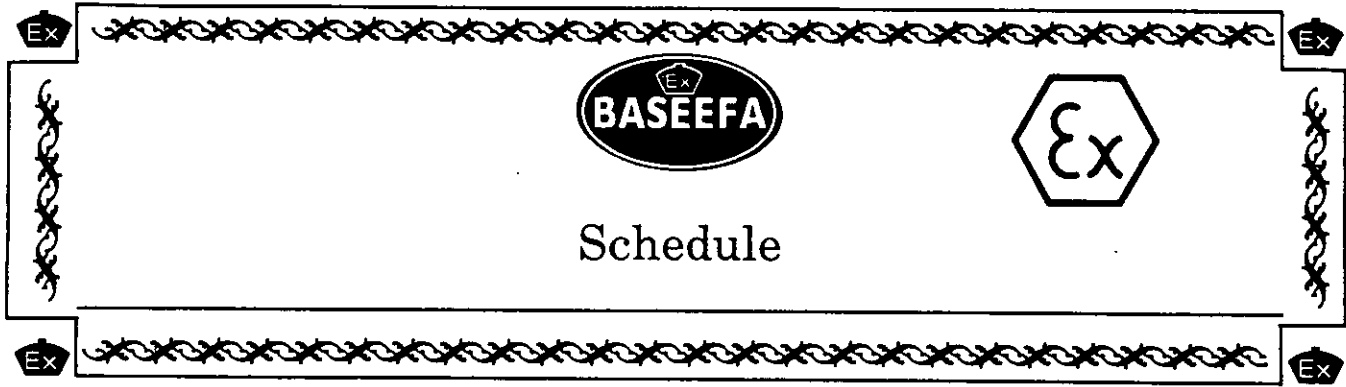


I M CLEARE
DIRECTOR EECS
9 March 1993



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: 0298 26211 Fax: 0298 79514 Telex: 668113 RLSD G





Certificate of Conformity BAS No Ex 88B2114/5 dated 9 March 1993

VARIATION FIVE

To permit the following:-

1. Minor changes to the top and primary printed circuit boards.
2. Drawing information changes.

The above changes do not affect intrinsic safety.

DRAWINGS

Number	Issue	Date	Description
CI2213-1 Sheet 1 of 10	4	11.92	Contents sheet
CI2213-1 Sheet 5 of 10	5	11.92	Primary p.c.b. 24V d.c. version
CI2213-1 Sheet 6 of 10	6	11.92	Top board p.c.b. layout

British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Certificate of Conformity - Variation

SUPPLEMENTARY CERTIFICATE BAS No. Ex 88B2114/6

This is to certify that Apparatus Certificate number:

Ex 88B2114

held by:

MEASUREMENT TECHNOLOGY LIMITED

of:

Luton, Bedfordshire, LU1 3JJ

for the:

MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY

is hereby extended to apply to the apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

File No: EECS 0703/02/017

Sheet 1 of 2

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances. Representation of equipment as "Certified" is valid only when the number of the prime certificate to which this certificate is a supplement is given on the relevant EECS Manufacturing Licence or Verification Certificate.



**I M CLEARE
DIRECTOR**

2 January 1996



Registration Number
020
The use of the Accreditation
Mark indicates recognition in
respect of those activities
covered by the manufacturing
certificate number 020.



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: 01298 28000 Fax: 01298 28244

British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Schedule

Supplementary Certificate BAS No. Ex 88B2114/6

VARIATION SIX

To permit minor changes to the drawings which do not affect the intrinsic safety assessment.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2213-1 Sheet 1	5	8.95	Contents Sheet
CI2213-1 Sheet 5	6	8.95	PCB Layout (Primary)
CI2213-1 Sheet 6	7	8.95	PCB Layout (Top Board)



British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Certificate of Conformity - Variation

SUPPLEMENTARY CERTIFICATE BAS No. Ex 88B2114/7

This is to certify that Apparatus Certificate number:

Ex 88B2114

held by:

MEASUREMENT TECHNOLOGY LIMITED

of:

Luton, Bedfordshire, LU1 3JJ

for the:

MTL 2213 3-CHANNEL SWITCH/PROXIMITY DETECTOR RELAY

is hereby extended to apply to the apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

File No: EECS 0703/02/017

Sheet 1 of 3

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances. Representation of equipment as "Certified" is valid only when the number of the prime certificate to which this certificate is a supplement is given on the relevant EECS Manufacturing Licence or Verification Certificate.



JP I M CLEARE
DIRECTOR
6 March 2001



Registration Number
020
The use of the Accreditation
Mark indicates accreditation in
respect of those activities
covered by the accreditation
certificate number 020.



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire. SK17 9JN. United Kingdom
Tel: 01298 28000 Fax: 01298 28244





Supplementary Certificate BAS No. Ex 88B2114/7

VARIATION SEVEN

To permit the use of an alternative Relay Type 3242 and the use of an alternative Top p.c.b.209/7 to suit. Also to permit the certification drawings to be redrawn to align with manufacturing drawings and to clarify that the relay contacts may only be connected to safe area apparatus. The original assessment is not affected by these changes.

Safe Area Connections

240V / 120V a.c. version or 24 d.c. version:- Supply Terminals 15 & 16 $U_m = 250V$.

240V / 120V a.c. version or 24 d.c. version:- Relay Contact Terminals 9 to 14 $U_m = 250V$.

Contacts Rated at:- 250V a.c., 5A, 100VA maximum

Hazardous Area Connections

As original Certificate.

DRAWINGS

<u>Number</u>	<u>Sheet</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2213-1	1	6	11.00	Certification Drawings
CI2213-1	2	3	11.00	Parts List
CI2213-1	3	3	11.00	Circuit Diagram - Primary
CI2213-1	4	3	11.00	Circuit Diagram - Secondary
CI2213-1	5	7	11.00	Primary d.c. Supply p.c.b.206/8
CI2213-1	6	8	11.00	Bottom d.c. Transformer p.c.b.207/4
CI2213-1	7	3	11.00	Component Layout Secondary
CI2213-1	8	3	11.00	General Assembly - 240V a.c./120V a.c.
CI2213-1	9	3	11.00	General Assembly - 24V d.c.
CI2213-1	10	3	11.00	Label
CI2213-1	11	1	11.00	Top Relay p.c.b.209/7
MTLI/CI30-013-01	1	1	09.2000/GS	Eichhoff E3242 12V SPDT Relay
MTLI/CI30-013-01	2	1	09.2000/GS	Eichhoff E3242 12V SPDT Relay



British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Schedule

Supplementary Certificate BAS No. Ex 88B2114/7

<u>Number</u>	<u>Sheet</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
MTLI/CI30-013-01	3	1	09.2000/GS	Eichhoff E3242 12V SPDT Relay
MTLI/CI30-013-01	4	1	09.2000/GS	Eichhoff E3242 12V SPDT Relay





Certificate of Conformity – Variation

This is to certify that Apparatus Certificate number: **Ex 88B2114**
held by: **Measurement Technology Limited**
of: **Power Court, Luton, Bedfordshire. LU1 3JJ**
for the: **MTL 2213**
3-Channel Switch/Proximity Detector Relay

is hereby extended to apply to the apparatus designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate

The Electrical Equipment Certification Service, retains responsibility for its original documentation. Baseefa (2001) Ltd. is responsible only for the additional work relating to this supplementary certificate and any other supplementary certificate that it has issued.

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

Baseefa (2001) Ltd. Customer Reference No. 0703

Project File No. 04/0246

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

Baseefa (2001) Ltd.

Health and Safety Laboratory Site, Harpur Hill,
Buxton, Derbyshire SK17 9JN
Telephone +44 (0) 1298 28255 Fax +44 (0) 1298 28216
e-mail info@baseefa2001.biz web site www.baseefa2001.biz
Registered in England No. 4305578 at 13 Dovedale Crescent, Buxton,
Derbyshire, SK17 9BJ

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.



Schedule

Description of the variation

Variation 8.1

To permit minor electrical change to the apparatus. This does not affect the Intrinsic Safety assessment.

Report No.

None

Drawings

Number	Issue	Date	Description
MTLI/C130-013-01/1 sht 1	2	02/2004	12V SPDT Relay
MTLI/C130-013-01/1 sht 2	2	02/2004	12V SPDT Relay
MTLI/C130-013-01/1 sht 3	2	02/2004	12V SPDT Relay
MTLI/C130-013-01/1 sht 4	2	02/2004	12V SPDT Relay

Special Conditions for Safe Use

None