




Health &
Safety
Executive

COPY 

BASEEFA

British Approvals Service for Electrical Equipment in Flammable Atmospheres

1. **CERTIFICATE OF CONFORMITY**

2. BAS No Ex 802334

3. This certificate is issued for the electrical apparatus:

SINGLE CHANNEL SWITCH OPERATED RELAY MTL2210

4. manufactured and submitted for certification by:

MEASUREMENT TECHNOLOGY LIMITED
of Power Court, 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

BS 5501:Part 1:1977 EN50 014
BS 5501:Part 7:1977 EN50 020


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

No 79(i)103

7 The apparatus marking shall include the code

[EE_x ia] IIC
(Ta = 60°C)

File No : SFA/16/2/030


B HILL
DIRECTOR Sheet 1/4
28 November 1980

44/42/43/44

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 Council Directive of 6 February 1979 (Doc 79/196/EEC). A facsimile of this mark is printed on sheet 1 of this certificate.

BY THE DIRECTOR OF THE SERVICE APPROVAL SERVICE UNIT

CERTIFICATE OF CONFORMITY



SCHEDULE

NUMBER Ex 802334

DATED 28 November 1980

APPARATUS

A SINGLE CHANNEL SWITCH OPERATED RELAY MTL2210 is designed to enable high power safe area loads to be controlled by switch contacts in a hazardous area.

The apparatus is powered from unspecified 24 volt d.c. or 120/240 volt a.c. supplies and two sets of changeover contacts are available for connection to safe area apparatus.

The circuitry is mounted on three printed circuit boards and the moulded plastic housing and terminal blocks provide a degree of protection of not less than IP20.

Intrinsic safety is ensured by the use of

(i) BASEEFA Approved components (mains transformer MTL2902 - BASEEFA No Ex 802239U or 24 volt transformer MTL2903 - BASEEFA No Ex 802240U IS Relay MTL2901 - BASEEFA No Ex 802238U.

(ii) printed circuit boards and insulating materials with a comparative tracking index of at least 300.

(iii) adequately rated resistors, silicon controlled rectifiers and triplicated zener diodes, and

(iv) good segregation

For intrinsic safety purposes, the input circuit is considered to be a source with a maximum open circuit voltage of 6.88 volts d.c. and a minimum output resistance of 300 ohms.

The currents and voltages switched by the relay contacts must not exceed 5A r.m.s. and 250 volts r.m.s. respectively and the rating must not exceed 500VA.

The capacitance and inductance or the inductance to resistance ratio of the load connected to the Hazardous Area terminals of the switch operated relay must not exceed the following values:

CERTIFICATE OF CONFORMITY



SCHEDULE

NUMBER Ex 802334

DATED 28 November 1980

Factor of Safety 1.5:

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu\text{H}/\text{ohm}$
IIC	13	69		600

Factor of Safety 3:

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu\text{H}/\text{ohm}$
IIC	0.9	18		150

The values for Groups IIB and IIA are 3 and 8 times the values for Group IIC respectively.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2210-01			MTL2210 Switch module single channel 120/240V a.c.
Sheet 2	2	10.80	
*Sheet 3	1	5.79	
*Sheets 4-6 inclusive	2	7.80	
*Sheet 7	1	5.79	
Sheet 8	2	10.80	
CI2210-02			MTL2210 single channel switch operated module 24V d.c.
*Sheet 2	1	5.79	
Sheet 3	2	10.80	
*Sheet 4	1	5.79	
*Sheets 5-7 inclusive	2	7.80	
*Sheet 8	1	5.79	
Sheet 9	2	10.80	

*These drawings are held with Certificate No Ex 79220X.



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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 802334

Issued to **MEASUREMENT TECHNOLOGY LTD**
of Luton, Bedfordshire

for the **SINGLE CHANNEL SWITCH OPERATED RELAY MTL2210**

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 variation specified in the following Schedule.

VARIATION ONE To permit minor changes to the printed circuit boards.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
*CI2210-01 Sheet 5	3	2.81	Top board PCB layout MTL2210 120/240V a.c.
*CI2210-02 Sheet 6	3	2.81	Top board PCB layout MTL2210 24V d.c.

*These drawings are held with Certificate No Ex 79220X

Code: [EEx ia] IIC

File: SFA 16/2/030

CERTIFICATE OF CONFORMITY BAS NO Ex 802334/1

37/27

B Hill

B HILL
DIRECTOR
Dated 12 May 1981



British Approvals Service for Electrical Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY VARIATION

THIS IS TO CERTIFY THAT CERTIFICATE OF CONFORMITY BAS NO Ex 802334

Issued to **MEASUREMENT TECHNOLOGY LTD**
of Luton, Bedfordshire

for the **SINGLE CHANNEL SWITCH OPERATED RELAY MTL2210**

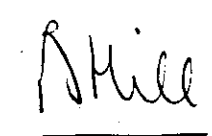
is hereby extended to apply to apparatus designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having the variations specified in the attached Schedule.

Code: [EEx ia] IIC

File: SFA 16/2/030

CERTIFICATE OF CONFORMITY BAS NO Ex 802334/2

32/13/14


B HILL
DIRECTOR
Dated 20 July 1981

CERTIFICATE OF CONFORMITY



SCHEDULE

NUMBER Ex 802334/2

DATED 20 July 1981

VARIATION TWO To permit the 40V d.c. primary crowbar circuit to be replaced by the 25V d.c. primary crowbar circuit (assessed in Test Report No 80/85, held on File SFA 12/372/034).

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2210-02 Sheet 5	3	1.81	Primary PCB

VARIATION THREE To permit the 24V d.c. transformer type MTL 2903 to be replaced by the type MTL 2903B (Component Certificate No Ex 802240U).

VARIATION FOUR To permit the use of a redesigned secondary circuit from which the output to the Hazardous Area circuit remains unchanged at 6.88V d.c. and 22mA. When this secondary circuit is fitted, the unit is designated MTL 2210B.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2210-01 Sheet 2	3	1.81	Parts List
Sheet 3	2	10.80	Circuit Diagram
Sheet 6	3	1.81	Secondary PCB
Sheet 8	3	1.81	Label
CI2210-02 Sheet 2	2	1.81	Parts List
Sheet 3	3	1.81	Parts List
Sheet 4	2	10.80	Circuit Diagram
Sheet 7	3	1.81	Secondary PCB
Sheet 9	3	1.81	Label

British Approvals Service for Electrical Equipment in Flammable Atmospheres

CERTIFICATE OF CONFORMITY VARIATION

THIS IS TO CERTIFY THAT CERTIFICATE OF CONFORMITY BAS NO Ex 802334

Issued to MEASUREMENT TECHNOLOGY LTD
of Luton, Bedfordshire

for the SINGLE CHANNEL SWITCH OPERATED RELAY MTL 2210

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.

Code: [EEx ia] IIC ($T_a = 60^{\circ}\text{C}$)

File: SFA 16/2/030



CERTIFICATE OF CONFORMITY BAS NO Ex 802334/3
Sheet 1/2
44/02

B HILL
DIRECTOR
Dated 13 May 1982

CERTIFICATE OF CONFORMITY



SCHEDULE

NUMBER Ex 802334/3

DATED 13 May 1982

VARIATION FIVE To permit a reduction in ratings for resistor R126 and diodes D104 to D108 inclusive.

VARIATION SIX To permit:

i) the 24 volt primary printed circuit board to be replaced by a 24 volt P.C.B. Assembly AD2000-25 (Component Certificate No Ex 822260U).

ii) the mains primary printed circuit board assembly to be replaced by a Mains P.C.B. Assembly AD2000-1 (Component Certificate No Ex 822261U).

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
C1 2210-01			
Sheet 1	3	2/82	Contents sheet
Sheet 2	4	2/82	Parts list
Sheet 3	3	2/82	Circuit diagram of MTL 2210B
Sheet 7	2	2/82	General assembly
Sheet 8	4	2/82	Label

VARIATION SEVEN To permit changes to the top and secondary printed circuit boards.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
C1 2210-01			
Sheet 5	4	2/82	Top board for MTL 2210B
Sheet 6	4	2/82	Secondary board for MTL 2210B



British Approvals Service for Electrical
Equipment in Flammable Atmospheres

Certificate of Conformity Variation

THIS IS TO CERTIFY THAT CERTIFICATE BAS NO Ex 802334


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

for the SINGLE CHANNEL SWITCH OPERATED RELAY MTL 2210

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 0703/02/129
(formerly SFA 16/2/030)

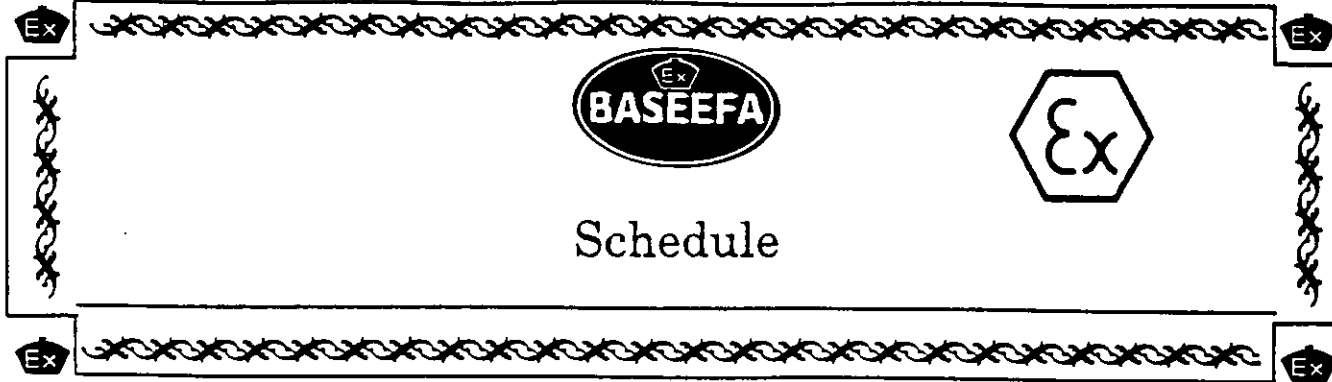
CERTIFICATE BAS NO Ex 802334/4
Sheet 1/2
TD


I M CLEARE
DIRECTOR EECS
11 February 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 802334/4 dated 11 February 1993

VARIATION EIGHT To permit the following:-

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

The above changes do not affect intrinsic safety.

DRAWINGS

Number	Issue	Date	Description
CI 2210-01 Sheet 1	4	11.92	Contents sheet
CI 2210-01 Sheet 5	5	11.92	Top board for MTL 2210B
CI 2210-01 Sheet 6	5	11.92	Secondary board for MTL 2210B

British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Certificate of Conformity - Variation

SUPPLEMENTARY CERTIFICATE BAS No. Ex 802334/5

This is to certify that Apparatus Certificate number:

Ex 802334

held by:

MEASUREMENT TECHNOLOGY LIMITED

of:

Luton, Bedfordshire, LU1 3JJ

for the:

SINGLE CHANNEL SWITCH OPERATED RELAY MTL 2210

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 0703/02/129

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

5 August 1999



Registration Number
020
The use of the Accreditation
Mark indicates compliance 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

British Approvals Service for Electrical
Equipment in Flammable Atmospheres



Schedule

Supplementary Certificate BAS No. Ex 802334/5

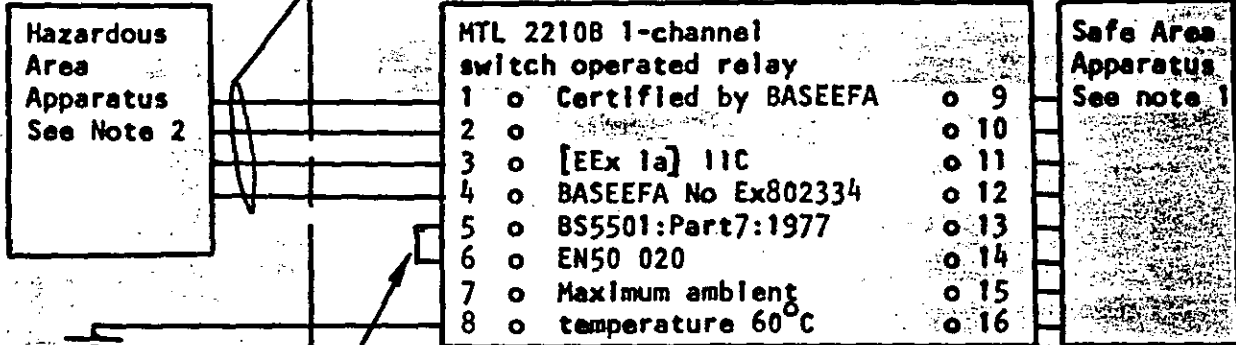
VARIATION NINE

To permit an increase in rating of R126.

DRAWINGS

<u>Number</u>	<u>Issue</u>	<u>Date</u>	<u>Description</u>
CI2210-01 Sheet 1 of 9	5	6.99	Contents Sheet
CI2210-01 Sheet 2 of 9	5	6.99	Parts List

See Note 4 for cable parameters



This may be connected within the safe area

Optional link, may be located in hazardous area Note No earth required

Hazardous Area Non-hazardous (Safe) Area

Note 1 Non-hazardous (Safe) Area Apparatus - unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts r.m.s. or 250 volts d.c.

Note 2 Hazardous Area Apparatus - must be as specified in paragraph 6.3.3. in BS 5345:Part 4: 1977. Normally the apparatus must be capable of withstanding an a.c. test voltage of 500V r.m.s. to earth or frame. However, when the input circuit is fully floating i.e. there is no connection to earth or to a MTL 2220, there is no need to meet this insulation requirement.

Note 3 The maximum relay contact ratings are:- AC 250V, 5A, 500VA; DC-250V, 5A, 250 watts.

Note 4 The following cable parameters must not be exceeded:-

Gas Group	Capacitance	Inductance	or	L/R Ratio
IIC (HYDROGEN)	13 (0.9) μ F	69 (18) mH		600 (150) μ H/ Ω

Applies to switches in zones 1 and 2 (Category Ex ib) and switches (having one of the supplementary protection methods specified in 4.1 of BS5501:Part 7:1977 EN50 020) in zone 0 (category Ex ia). The figures in () apply to switches without any supplementary protection in zone 0 (category Ex ia)

The values for Group IIB and IIA are 3 and 8 times the values for Group IIC respectively.

Certifying Authority: BASEEFA

BASEEFA System Certificate
No Ex 79248, Code Ex Ia IIC

Used on

Scale

Tolerance unless otherwise stated \pm

Sheet 1 of 1

Title Installation diagram for the MTL 2210B 1-channel switch relay 24V d.c., 120V, or 240V a.c.

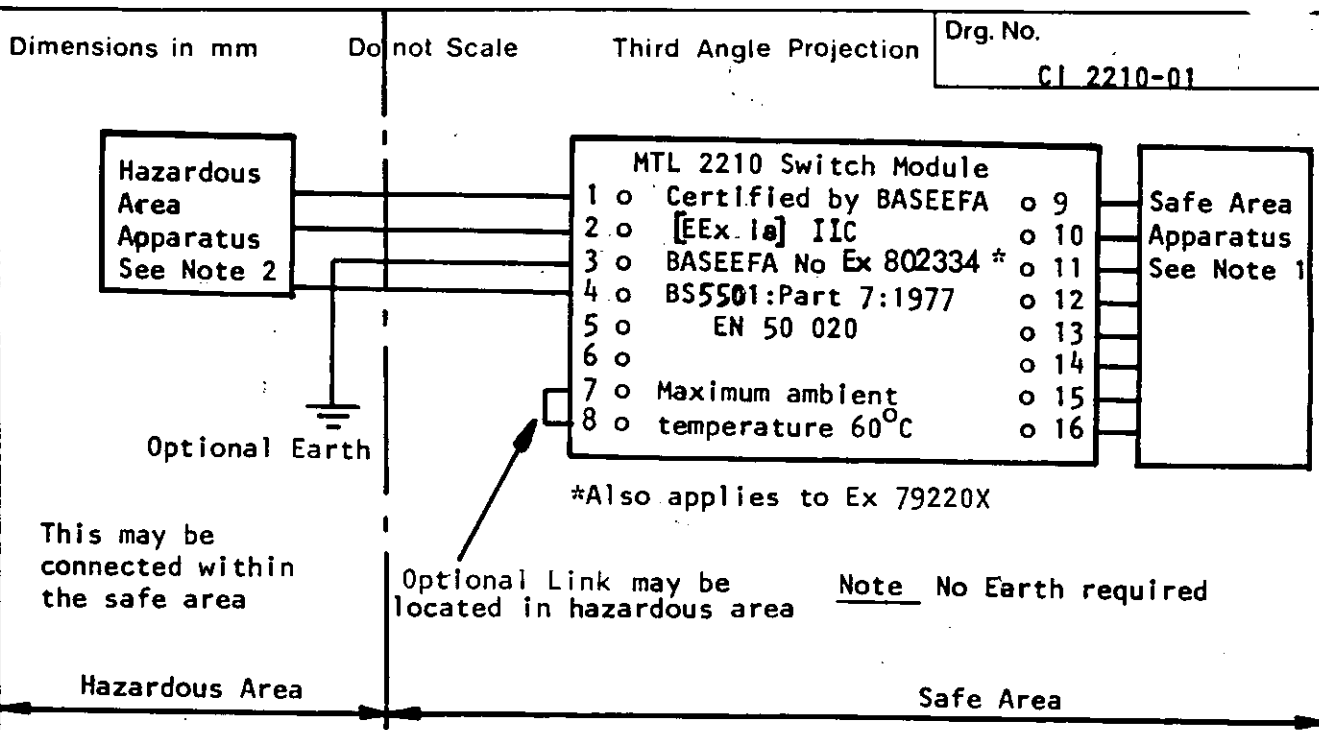
Drg. No. SCI-33

Iss. Date / Drawn	1	DRG
	2	
	3	

MEASUREMENT TECHNOLOGY LTD.
Luton, England
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Modification

Iss. Date / Drawn	1 579/DRG
	2 10.80/DRG
	3



Note 1 Safe Area Apparatus - unspecified except that it must not be supplied from, nor contain, a source of potential under normal or fault conditions exceeding 250v rms or 250v dc.

Note 2 Hazardous Area Apparatus - must be as specified in paragraph 5.3.3. in BS 5345: Part 4: 1977. Normally the apparatus must be capable of withstanding an a.c. test voltage of 500V r.m.s. to earth or frame. However when the input circuit is fully floating i.e. there is no connection to earth or to an MTL 2220 there is no need to meet this insulation requirement.

Note 3 The maximum relay contact ratings are :- AC- 250V, 5A, 500VA; DC-250V, 5A, 250 watts.

Note 4 The following cable parameters must not be exceeded:-(Applies to protected switches in Zone 0 and unprotected switches in Zone 1 and 2).

GAS GROUP	CAPACITANCE	INDUCTANCE OR L/R RATIO
IIC (Hydrogen)	13µF	69mH 600µH/Ω

Note 5 The following cable parameters must not be exceeded:-(Applies to unprotected switches in Zone 0).

GAS GROUP	CAPACITANCE	INDUCTANCE OR L/R RATIO
IIC (Hydrogen)	0.9µF	18mH 150µH/Ω

The values for Group IIB and IIA are 3 and 8 times the values for Group IIC respectively.

BASEEFA System Certificate No Ex79248
Code Ex ia IIC
Certifying authority:BASEEFA

Used on	Scale
Tolerance unless otherwise stated ±	Sheet 9 of 9
Title Installation Drawing for MTL 2210 Switch Module Single Channel 120/240V ac	Drg. No. CI2210-01

Dimensions in mm

Do not Scale

Third Angle Projection

Drg. No.

CI 2210-02

Hazardous Area Apparatus See Note 2

MTL 2210 Switch Module

1	o	Certified by BASEEFA	o	9
2	o	[EEx ia] IIC	o	10
3	o	BASEEFA No Ex 802334 *	o	11
4	o	BS5501:Part 7:1977	o	12
5	o	EN50 020	o	13
6	o	Maximum ambient	o	14
7	o	temperature 60°C	o	15
8	o		o	16

Safe Area Apparatus See Note 1

Optional Earth

This may be connected within the safe area

Optional Link may be located in hazardous area

Note No Earth required

Hazardous Area

Safe Area

* Also applies to Ex 79220X

Note 1 Safe Area Apparatus - unspecified except that it must not be supplied from, nor contain, a source of potential under normal or fault conditions exceeding 250v rms or 250v dc.

Note 2 Hazardous Area Apparatus - must be as specified in paragraph 6.3.3. in BS 5345: Part 4: 1977. Normally the apparatus must be capable of withstanding an a.c. test voltage of 500V r.m.s. to earth or frame. However when the input circuit is fully floating i.e. there is no connection to earth or to an MTL 2220, there is no need to meet this insulation requirement.

Note 3 The maximum relay contact ratings are:- AC - 250V, 5A, 500VA; DC-250V, 5A, 250 Watts.

Note 4 The following cable parameters must not be exceeded:- (Applies to protected switches in Zone 0 and unprotected switches in Zone 1 and 2)

GAS GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
IIC(Hydrogen)	13µF	69mH		600µH/Ω

Note 5 The following cable parameters must not be exceeded:- (Applies to unprotected switches in Zone 0).

GAS GROUP	CAPACITANCE	INDUCTANCE	OR	L/R RATIO
IIC(Hydrogen)	0.9µF	18mH		150µH/Ω

The values for Group IIB and IIA are 3 and 8 times the values for Group IIC respectively.

Certifying Authority: BASEEFA

BASEEFA System Certificate No. Ex 79248 Code Ex ia IIC

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Modification 1 579/DRG 2 1080/DRG Note 2 CHANGED, Ex 802334 ADDED. 3

Used on	Scale
Tolerance unless otherwise stated †	Sheet 10 of 10
Title Installation Drawing for MTL 2210 Switch Module Single Channel 24v dc	Drg. No. CI 2210-02