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Batch No

ELECTRICAL APPARATUS

Approval certificate for Intrinsic Safe Interface Units
Model and Series MTL 2215

Manufactured by Measurement Technology Ltd

Manufactured for Control Devices Pty. Ltd.

Limitations to operation the apparatus may be operated at any location in an underground coal mine in Queensland in accordance with the requirements of the Coal Mining Act and conditions of approval.

Approval number MDA Ex. i 1183 Old
Associated Approval and Drawing numbers on reverse of sheet

Date 23rd May. 1984.

In accordance with the provisions of the Queensland Coal Mining Act 1925 as amended it is hereby notified that on this date I have approved for use at Coal Mines in Queensland the above described apparatus subject to the following conditions.

(1) The approval numbers listed above shall be stamped on a nameplate permanently attached to the appropriate enclosure or embossed upon its surface and a copy of this approval and conditions shall be supplied to each purchaser of this apparatus or machine.

(2) The requirements of the Queensland Coal Mining Act 1925 as amended shall be complied with in regard to the installation, operation, electrical protection, maintenance, and repair of apparatus and machines.

(3) In normal operation the temperature of the external surface of apparatus shall not exceed 100 degrees Celsius or the temperature rating of associated electrical insulation if of a lower classification.

(4) There shall be no variation in materials, design or construction associated with this approval as is indicated by the drawings, certificates and information submitted to obtain this approval, without the prior consent of the Chief Inspector of Coal Mines.

(5) Unauthorised alteration or substitution of approved apparatus shall render this approval void.

(6) When maintenance, alteration or repair is allowed to approved apparatus, compliance with the Queensland Coal Mining Act 1925 as amended and Australian Standards Association Specifications shall be shown to be maintained and established.

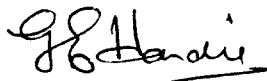
(G.E. Hardie
Chief Inspector of Coal Mines.)

Associated Drawings

SCI-69 sheet 1 issue 1 dated December 1982
C12215-01 sheet 1 issue 1 dated September 1982
C12215-01 sheet 2 issue 1 dated September 1982
C12215-01 sheet 3 issue 1 dated September 1982
C12215-01 sheet 4 issue 1 dated September 1982
C12215-01 sheet 5 issue 1 dated September 1982
C12215-01 sheet 6 issue 1 dated September 1982
C12215-01 sheet 7 issue 1 dated September 1982
C12215-02 sheet 1 issue 1 dated November 1982
C12215-02 sheet 2 issue 1 dated November 1982
C12215-03 sheet 1 issue 1 dated November 1982
C12215-03 sheet 2 issue 1 dated November 1982

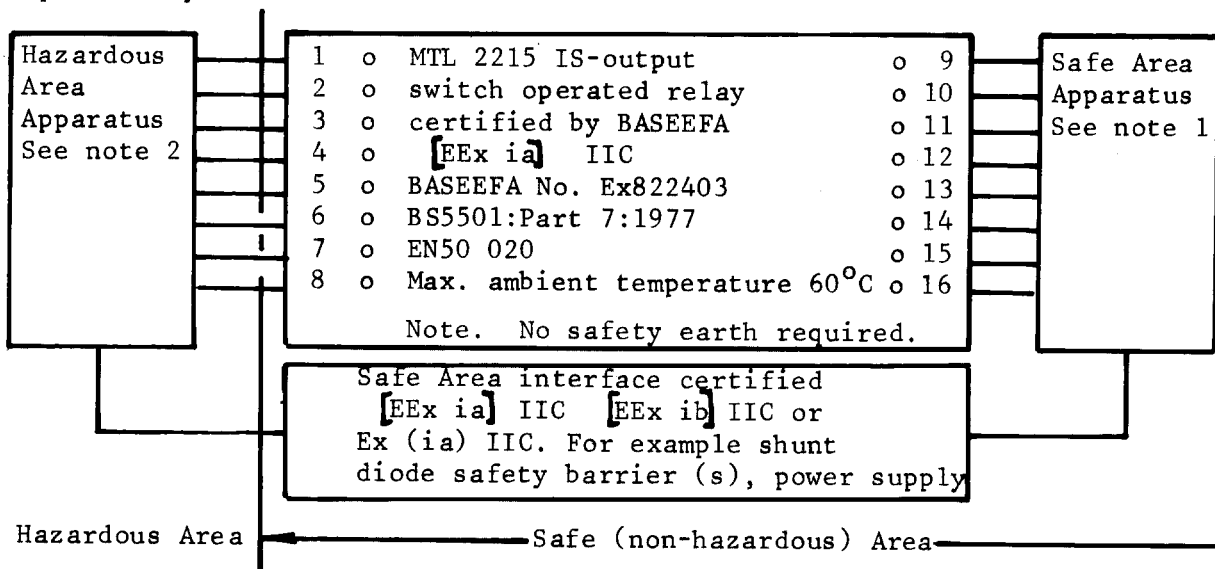
Additional Conditions

7. A copy of the approval documents shall be provided with each such said apparatus supplied to a coal mine in Queensland.
8. Any repair to the said apparatus that may affect its explosion proof properties shall be carried out only at a workshop acceptable to the manufacturer.
9. Adequate precautions shall be taken to guard against danger arising from the interconnection of intrinsically safe sources of current and the charging of intrinsically safe circuits by leakage or induction from other circuits.
10. The said apparatus shall, with the exception of the intrinsically safe circuits be fully enclosed in order to satisfy the requirements of the Coal Mining Act.
11. The said apparatus shall be installed and maintained strictly in accordance with drawing SCI69 sheet 1.
12. No apparatus connected to the safe area terminals of the said apparatus shall be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250 volts rms or 250 volts dc.
13. The said apparatus may be used only for the purpose of switching circuits approved by the Chief Inspector of Coal Mines as being intrinsically safe and having a potential not exceeding 75 volts.
14. The manufacturer shall on his own responsibility carry out such tests and examinations as are necessary to ensure that the said apparatus provides satisfactory operation in service.
15. The input winding of the power transformer fitted to the control module shall be provided with the protection required by clause 2.3.2 of Australian Standard 1829-1981.



G.E. Hardie,
Chief Inspector of Coal Mines.

This drawing enables a safe system to be designed but is not covered by a specific system certificate.



Note 1 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 250V r.m.s. or 250V d.c.

Note 2 The hazardous area terminals (terminals 1 to 8) have been certified as complying with paragraph 1.3 in BS5501:Part 1:1977 - EN50 014 i.e. they do not generate, store or exceed the following values:- 1.2V 0.1A, 20 μ J or 25mW. Systems covered by BS5501:Part 9:1982 - EN50 039 allow devices meeting these requirements to be connected into the system see paragraphs 2.1 and 2.3. Where systems are covered by SFA 3012:1972 and reference to BS5345:Part 4:1977 is made, then the MTL 2215 can be connected into the system without the need for further certification (see paragraph 6.3.3 in BS5345:Part 4:1977)

Note 3 The switch contacts of the MTL 2215 can be connected into any EExiaIIC, EExibIIC, or ExiaIIC system provided the maximum voltage of the system is less than 75 volts.

Note 4 The maximum permitted cable parameters are determined by those of the system into which the MTL 2215 is connected. The MTL 2215 can be connected into any I.S. system without affecting the Group classification or any insulation or cable requirements e.g. multicore cable restrictions.

EN50 039 paragraph 2.1 "intrinsically safe electrical system". An assembly of interconnected items of electrical apparatus, described in a descriptive system document, in which the circuits or parts of circuits, intended to be used in a potentially explosive atmosphere are intrinsically safe circuits.

EN50 039 paragraph 2.3 "uncertified intrinsically safe electrical system. An electrical system conforming to 2.1 for which the knowledge of the electrical parameters of the items of certified intrinsically safe electrical apparatus, certified associated electrical apparatus, non-certified devices conforming to 1.3 of European Standard EN50 014 'General requirements' and the knowledge of the electrical and physical parameters of the interconnecting wiring permit the unambiguous deduction that intrinsic safety is preserved".

BS5345:Part 4:1977 paragraph 6.3.3 "Simple electrical apparatus and components Simple electrical apparatus and components (e.g. thermocouples, photo cells, junction boxes) may be used in intrinsically safe systems without certification provided they do not generate or store more than 1.2V, 0.1A, 20 μ J and 25mW in the intrinsically safe system in the normal or fault conditions of the system prescribed in the standards referred to in clause 5 & also if no components located in the hazardous area can dissipate more than 1.3W in such conditions.

Title Installation diagram for the MTL2215 IS-output switch operated relay

Drg. No. SCI-69
Sheet 1 of 1

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Modification

Iss. Date / Drawn
1 / 2.82 / DRG