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APPROVAL REPORT

COMMUBOX FXA 195-P FIELD COMMUNICATOR FOR HAZARDOUS (CLASSIFIED) LOCATIONS

Prepared for:

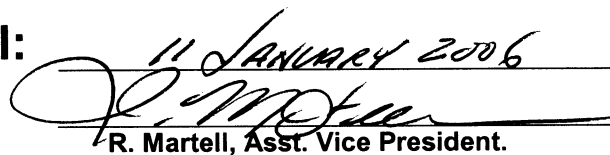
Endress + Hauser GmbH + Co. KG
Hauptstraße 1
D-79689 Maulburg
GERMANY

Project ID: 3024841

Class: 3610

Date of Approval:

Authorized by:

11 JANUARY 2006

R. Martell, Asst. Vice President.

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**COMMUBOX FXA 195-P FIELD COMMUNICATOR
FOR
HAZARDOUS (CLASSIFIED) LOCATIONS**

from

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Hauptstraße 1
D-79689 Maulburg
GERMANY**

I INTRODUCTION

- 1.1 Endress + Hauser GmbH + Co. KG (manufacturer) have requested the Approval of the apparatus listed in Section 1.4 for compliance with the following standards as associated intrinsically safe apparatus for connection to Class I, II and III, Division 1, Groups A, B, C, D, E, F, and G hazardous (classified) locations in accordance with entity requirements and Control Drawing 960007250. Ambient temperature range -20 to 50°C.
- 1.2 This Report may be freely reproduced only in its entirety and without modification.
- 1.3 **Standards**

Title	Standard Number	Date
Electrical Equipment for Use in Hazardous (Classified) Locations, General Requirements	FM 3600	November 1998
Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, & III, Division 1, and Class I, Zone 0 & 1 Hazardous (Classified) Locations	FM 3610	October 1999
Electrical and Electronic Test, Measuring and Process Control Equipment	FM 3810 Including Supplement #1	March 1989 July 1995

- 1.4 **Listing:** The product will appear in the Approval Guide a publication of FM Approvals as follows;

FXA195-P "COMMUBOX" Field Communicator
AIS/ I, II, III / ABCDEFG – 960007250; Entity

Entity parameters

Voc = 6.5V Isc = 6.1mA Ca = 21µF La = 790mH
Vmax = 30V Imax = See Control Drawing Ci = 0 Li = 0

II DESCRIPTION

- 2.1 The COMMUBOX FXA195 is a bi-directional physical interface that connects between the USB port of a personal computer located in an unclassified location and a process transmitter located in the hazardous (classified) location. The FXA195 is for use in an unclassified location and to provide intrinsically safe connections to an intrinsically safe transmitter loop. Power for the FXA 195 is provided by the USB port of the computer. There are no other sources of power for the FXA 195. The FXA 195 is intended for use in intrinsically safe loops with voltages not exceeding 30Vdc.
- 2.2 The FXA 195 consists of a single PCB mounted within a moulded plastic enclosure. The housing consists of two half shells secured together using four screws. One end has an opening for the USB cable and the other end has two 4mm “banana” type plugs for connection of the intrinsically safe test leads, and a switch for connecting the FXA 195 into and out of the intrinsically safe loop.
- 2.3 The communicator has been examined and tested for operation at ambient temperatures of -20°C to +50°C.
- 2.4 **Protection against Fire, Shock and Injury** – Electrical equipment acceptability is based on the ability of the equipment to minimise the risk of electrical shock, fire, and personal injury. The COMMUBOX FXA195 was examined for their ability to minimize the risk of shock, fire and injury. The apparatus is power limited and operates at less 30Vdc. Testing was not required. This is satisfactory.

III EXAMINATIONS AND TESTS

General - Representative samples of the Field Communicator listed in Section 1.4 were examined and tested by CSA International, under their Project Number 1701513 to determine its acceptability for connection to the specified hazardous locations. Examination and testing by CSA International was conducted under the guidelines set forth in the FM Approvals/CSA International Contract and Testing Reports Agreement. Test results compiled by CSA International have been satisfactorily reviewed by FM Approvals and are attached to this report.

IV MARKING

The following information will need to appear on the apparatus identified in Section 1.4:

- Manufacturer’s name and manufacturing location.
- Serial Number
- Maximum input ratings
- Ambient temperature range.
- Control Drawing Reference
- The FM Approval mark.
- Hazardous Location Information.

V REMARKS

- 5.1 Installations shall comply with the relevant requirements of the National Electrical Code (ANSI/NFPA 70).
- 5.2 Installations shall comply with the manufacturer's instruction manual.
- 5.3 For the intrinsically safe variant, control room equipment connected to intrinsically safe associated apparatus should not use or generate more than 250 V rms or DC.
- 5.4 See ANSI/ISA RP12.06.01, Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations for guidance on the installation of intrinsically safe apparatus and systems.

VI FACILITIES AND PROCEDURES AUDIT

The manufacturing sites in Maulburg, Germany and Greenwood IN are subject to follow-up audit inspections. The facilities and quality control procedures in place were found to be satisfactory to manufacture product identical to that examined and tested as described in this report.

VII MANUFACTURERS RESPONSIBILITIES

- 7.1 Documentation considered critical to this Approval is on file at FM Approvals and listed in the Documentation File, Section VIII of this report. No changes of any nature shall be implemented unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The Approved Product Revision Report, Form 797, shall be forwarded to FM Approvals as notice of proposed changes.
- 7.2 On 100% of production, the manufacturer shall conduct routine dielectric tests. Transformer T100 shall withstand for one minute, with no insulation breakdown, the application of 2500Vrms between the primary and secondary winding. Alternatively the voltage test may be conducted at 1.2 times the test voltage, but with a duration of at least 1s.

WARNING: The dielectric test may present a hazard of injury to personnel and/or property and should only be performed under controlled conditions, and by persons knowledgeable of the potential hazards of such testing to minimize the likelihood of shock and/or fire.

- 7.3 The manufacturer shall make available to users of the equipment listed in section 1.4, the installation drawings 960007250. The manufacturer shall make additional copies available upon request.

VIII DOCUMENTATION

The following drawings describe the items listed in Section 1.4 and were used for this examination and filed under Project 3024841.

Drawing No	Drawing Title	Revision
960007162	Commubox USB equipment configuration	-
960007249	FXA195 FM Schild/label - Beschriftung/printing	30/08/05

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Drawing No	Drawing Title	Revision
960007250	FM Control Drawing	14/10/05
960527-0010	Transformer EF16	A
960599-0001	Conductive Pattern SS FXA 195 Commubox	A
960599-0002	Conductive Pattern CS FXA 195 Commubox	A
960599-0102	Assembly Plan CS FXA 195 Commubox USB	A
960599-1000	FXA 195 Commubox USB	A

IX CONCLUSION

The apparatus described in 1.4 meets FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this report.

EXAMINATION AND TESTING BY: R. Wildish (CSA International) and N. Ludlam (FM)

PROJECT DATA RECORD: 3024841

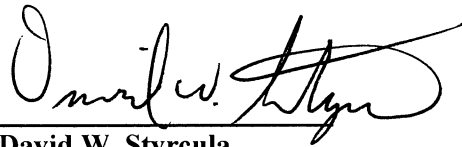
ATTACHMENTS: Label Drawings: 960007249
Control Drawing: 960007250
CSA International Report No: 1701513

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