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APPROVAL REPORT

Project No: 0003053331
Supplements Project No.: 30344449
Class: 3010
Product Name: BU-110 and BV-110 Loop Based Displays

Product Type: Fire Alarm Control Unit Accessories
Name of Listing Company: Autronica Fire and Security AS
Address of Listing Company: PO Box 853
Kongsberg NO-3611
Norway

Customer ID: 1000002617-1
Customer website <http://www.autronicafire.com/Pages/Home.aspx>

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9 September 2015

Date of Approval

1 INTRODUCTION

1.1 Autronica Fire and Security AS requested Approval of the apparatus listed in Section 1.4 for compliance with the standards listed in Section 1.3 as suitable for the listing categories described in Section 1.4.

1.2 This report may be freely reproduced only in its entirety and without modification.

1.3 Standards

1.3.1 United States Standards

Title	Number	Issue Date
Fire Alarm Signaling Systems	3010	2010

1.4 Listing

The product will be updated in the Approval Guide, an on-line resource of FM Approvals, as follows with all changes highlighted, deletions shown with strikethroughs and additions in red text:

1.4.1 US Listings

☒Electrical Signaling ☒Signaling Systems (Fire) ☒Local Protective Signaling ☒Local Protective Signaling

AutroSafe Integrated Fire and Gas Alarm Control System 4

AutroSafe Integrated Fire and Gas Alarm Control System 4 consists of either a single control panel or networked configuration from a selection of five different panels. A single BS-420, BS-420M, BS-420G, or BS-420G2 Fire Alarm Control using software designated 4.4.X requires a power supply, either a BP-405 Power Cabinet, or a BPS-405 or BPS-410 alternatively BSS-103A. It can accommodate a maximum of 12 modules. Controls are limited to six loops and a total of 512 devices, all panels contain BSL-310 and BSS310A as standard. Loops can contain initiating devices or notification appliances. System power from the BP-405 is a supervised 5.0 A at 24 Vdc from 115/230 Vac or a 24 Vdc from a two 18 Ah battery bank provided internally to the BP-405. Optional battery banks of up to 115 Ah are available for a multi-panel AutroSafe Fire Alarm Control System that may include a BC-420, BC-420G2, BC-440, or BC-440G2, Control panel using the same software and power as the BS-420 and optional panels: BS-430 or BS-430G2 Operator Panel, BU-BV-420 or BU-BV-420G2 Repeater Panel, **BU-110 Fire Brigade Loop Panel and BV-110 Information Loop Panel**. BX-4XX controls are suitable for operation in ambient temperatures from 32° to 140°F (0° to 60°C); the BD series heat detectors operate from -4° to 125°F (-20° to 52°C); all other peripheral devices are rated at -4° to 158°F (-20° to 70°C).

Inter-panel communication, Class A, in accordance with the requirements of NFPA72 2010 edition requires use of the appropriate Ethernet switches, and at least two fiber optic communication lines between the panels from among the following:

Switch Type	Description	Autronica part number
FL SWITCH SFNT 5TX	5 RJ45 ports	116-5151-030.2127
FL SWITCH SFNT 4TX/FX	4 RJ45 ports, 1 fiber optic multi-mode port (SC)	116-5151-030.2128
FL SWITCH SFNT 8TX	8 RJ45 ports	116-5151-030.2129
FL SWITCH SFNT 7TX/FX	7 RJ45 ports, 1 fiber optic multi-mode port (SC)	116-5151-030.2130
FL SWITCH LM 5TX	5 RJ45 ports	116-5151-030.2131
FL SWITCH LM 4TX/FX	4 RJ45 ports, 1 fiber optic multi-mode port (SC)	116-5151-030.2132
FL SWITCH LM 4TX/2FX	4 RJ45 ports, 2 fiber optic multi-mode port (SC)	116-5151-030.2133

FL SWITCH LM 4TX/FX SM	4 RJ45 ports, 1 fiber optic single-mode port (SC)	116-5151-030.2134
FL SWITCH LM 4TX/2FX SM	4 RJ45 ports, 2 fiber optic single-mode port (SC)	116-5151-030.2135

The optional modules are: BSJ-310 output module, each of which allows for 8 programmable open collector, non-monitored 100 mA outputs; BSD-310/311 detector loop module, each of which allows for connection of one AL Com loop of 127 devices, which can be configured for Class X or Class B signaling line circuit performance, panels are limited to six loops and a total of 512 devices, loops can be initiating or notification; BSB-310 alarm output module, each of which allows for connection of 4 alarm outputs having Class B notification appliance circuit performance; BSE-310/320 input modules allowing for connecting 4 monitored or 8 non monitored inputs respectively. AL Com addressable initiating devices include the Models BD-200, BD-300, BD-500, and BD-501 heat detectors rated 130°F (56°C) with RTI classification for detector set to rate compensated is V2Fast with a 10.6m x 10.6 m spacing (35x35 ft). RTI classification for detector set to fixed is Quick with a 6m x 6 m spacing (20x20 ft). Models BH-200, BH-300 and BH-500, BH-500/S and BH-500/N) photoelectric type smoke detectors BH-220, BH-320 and BH-520 photoelectric type smoke detectors with thermistor heat detection, Model BG-201 Flame Detector with or without the optional independent alarm outputs for each detector can be provided by BN-304 I/O units, and Models BF-300, BF-300M manual fire alarm stations. The addressable interface BN-300 works as a switch monitoring unit, and the BN-310 provides a relay output from the AL Com detector loop. The BNB-331 allows connection of conventional initiating devices such as the BG-21 Flame detector. The BN-201 allows the connection of supervisory devices to the Al Com. Relay output equipment can be connected to the loop with a BN-320 I/O unit. BN-320/02 is specifically for door control. BN-320/04 is the standard control unit and the BN-320/05 is for sprinkler system monitoring. The BNB-300/01 module provides the electronic circuitry for the manual call points. An addressable notification device, the BBR-200 addressable sounder is available to be connected to a BSD-31X loop as an alarm notification device. The addressable BBR-110 mounts under the base of a BD or BH series detector. An AutoFieldBus driver in the panel will establish an AutoFieldBus to communicate with BSD-321 RS485 converter unit, a BSD-340 PowerLoop driver to connect to X33AF PL Flame detector and BN-342/1, 342/2 PowerLoop 4-20 mA input. The Autrofieldbus may be expanded using a BSL-321 or BSL-322 fiber optic converter or a BSL-325 booster in order to extend the length of the cables between units on the Autrofieldbus. See also: Automatic Releases for Extinguishing Systems and Other Fire Protection Equipment listing.

Company Name:	Autronica Fire and Security AS
Company Address:	N 7483 Trondheim, Norway
Company Website:	http://www.autronicafire.com
New/Updated Product Listing:	No
Listing Country:	Norway
Certification Type:	FM Approved

2 DESCRIPTION

BU-110 and BV-110 loop connected display models for use with the FM Approved AutoSafe systems. The BU-110 and BV-110 display units are similar to the FM Approved BU-210 and BV-210, but are now connected on the detector loop instead of requiring separate cabling. The BU-210 and BV-210 are FM Approved under project 3034449.

3 EXAMINATIONS AND TESTS

3.1 US Examination

Samples were submitted for examination and testing. The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

All testing and analysis considered appropriate was conducted and verified to be in compliance with the Standards defined in Section 1.3.

4 MARKING

- 4.1 Product intended for use in Canada shall be provided with caution and warning labels in both English and French.

REMARKS

- 4.2 Extreme care should be taken with the installation of this equipment. The latest edition of the manufacturer's instruction manual must be followed completely, and any problems should be resolved by consultation with the factory or the authorized representative.
- 4.3 All installation wiring shall be in accordance with the appropriate national electrical code.
- 4.4 An Approval examination of equipment such as this can only evaluate typical configurations. Although those components identified in this report have been tested, it is beyond the scope of such an examination to test all possible configurations. It is therefore necessary, that those responsible for the setup and acceptance of specific installations take special care to verify that the equipment, including programmable functions, is configured to operate properly for the required performance of that installation.
- 4.5 Tampering and replacement with non-factory components may adversely affect the safe use of the system.

5 SURVEILLANCE AUDIT

The design and manufacturing facilities at the following location(s) shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture product identical to that tested and Approved. An FM Approved Products/Specification-Tested Revision Request Form shall be submitted to FM Approvals for requesting to manufacture product at any additional or alternate manufacturing facilities which are not listed below.

Design

Autronica Fire and Security AS
PO Box 853
Kongsberg NO-3611
Norway

Manufacturing

Autronica Fire and Security AS
PO Box 853
Kongsberg NO-3611
Norway

6 MANUFACTURER'S RESPONSIBILITIES

- 6.1 Documentation that is applicable to this approval is on file at FM Approvals and listed in the Documentation File, Section 8, of this report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Products/Specification-Tested Revision Request Form shall be forwarded to FM Approvals as notice of proposed changes.
- 6.2 The Manufacturer is responsible for control of the product marking and installation instructions for the System.

- 6.3** The manufacturer shall provide installation, operating, and maintenance manual[s] with each system.
- 6.4** The system shall be dielectric tested on 100% of production. The insulation between accessible conductive parts and the power supply input connections shall withstand for one minute, with no insulation breakdown, the application of 1000 Vac [1400 V dc] with respect to the protective ground. Alternatively, a test potential of 1200 Vac [1700 V dc] may be applied for at least one second. **WARNING:** The dielectric test required 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.
- 6.5** In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

7 DOCUMENTATION

See attached blueprint report.

8 CONCLUSION

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

PROJECT DATA RECORD: 0003053331

ATTACHMENTS: Blueprint Report

Blueprint Report

Autronica Fire and Security AS (1000002617)

Class No 3010

Original Project I.D. 3034449

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
066-M/4.2/007_3v D		Plastic parts of Front panel	3034449	Yes (msw8)
116-9212-449.000 1		Bill Of Material BSR-421 PCB	3053331	Yes (pdf)
116-9212-450.000 3		Bill Of Material BSR-422 PCB	3053331	Yes (pdf)
116-BS-200 Rev. 1		BS-200 Bill of material print	3034449	Yes (pdf)
116-BS-210 Rev. 10		BS-210 Bill of material print	3034449	Yes (pdf)
116-BS-211 Rev. 10		BS-211 Bill of material print	3034449	Yes (pdf)
116-BSR-421 2		Bill Of Material BOARD AL_COM INFO PANEL	3053331	Yes (pdf)
116-BSR-422 2		Bill Of Material DISPLAY MODULE BU-BV-110	3053331	Yes (pdf)
116-BU-110 2		Bill Of Material FIRE BRIGADE LOOP PANEL	3053331	Yes (pdf)
116-BU-210 Rev. 0		BU-210 Bill of material print	3034449	Yes (pdf)
116-BUR-200 Rev 0		BUR-200 Bill of material print	3034449	Yes (pdf)
116-BV-110 2		Bill Of Material INFORMATION LOOP PANEL	3053331	Yes (pdf)
116-BV-210 Rev. 10		BV-210 Bill of material print	3034449	Yes (pdf)
116-P-APRIME2V 12/01/10		Menu Structure English	797-35334-283	Yes (pdf)
116-P-APRIME2S 12/01/10		How to operate BS-200	797-35334-283	Yes (pdf)
116-P-APRIME2U 12/01/10		Shortform User Guide	797-35334-283	Yes (pdf)
116-P-BS200/CGI B		Fire Alarm Control Panel BS-200	797-35334-283	Yes (pdf)
116-P-BS200M/CGI E		Maritime Fire Alarm Control Panel BS-200M	797-35334-283	Yes (pdf)
116-P-BS211/CGI A		Repeater Panel BS-211	3034449	Yes (pdf)
116-P-BU110/CGI 2014-05-16		Datasheet FIRE BRIGADE LOOP PANEL BU-110	3053331	Yes (pdf)
116-P-BU210/CGI A		Fire Brigade Panel BU-210	3034449	Yes (pdf)
116-P-BUR200/CGI C		Mimic Driver BUR-200	797-35334-283	Yes (pdf)
116-P-BV110/CGI 2014-05-16		Datasheet INFORMATION LOOP PANEL BV-110	3053331	Yes (pdf)
116-P-BV210/CGI A		Information Panel BV-210	3034449	Yes (pdf)
116-P-CONNECTID		Connecting Loop Units	797-35334-283	Yes (pdf)
7212-385.0007 B E A		BSA-200 Assembly drawing	3034449	Yes (pdf)
7212-386.0003 B E A		BSD-200 Assembly drawing	3034449	Yes (pdf)
7212-389.0003 B L A		BUR-200 Assembly drawing	3034449	Yes (pdf)
7212-392.0004 B E A		BSR-200 Assembly drawing	3034449	Yes (pdf)
7212-393.0004 B E A		BSR-210 Assembly drawing	3034449	Yes (pdf)
9212-386.0001 5		BSD-200 Bill of material print	797-35334-283	Yes (pdf)
BS-1276 I		BSR-200 Mediumpanel schematics	797-35334-283	Yes (pdf)
BS-1277 G		BSR-210 Mediumpanel schematics	797-35334-283	Yes (pdf)
BU-6591 G		Mimicdriver BUR-200 Schematics	3034449	Yes (pdf)
BU-6593 A		BUR-200 Mimic driver Assembly drawing	3034449	Yes (pdf)
E-2739 E		BUR-200 Silketrykktegning	797-36795	Yes (pdf)
E-2739 E		BUR-200 Silketrykktegning	797-36975-283	Yes (pdf)
E-2745 E		BS-200 Label	797-36975-283	Yes (pdf)
E-2746 D		BS-200M Skilt godkjenning serienr.:	797-35334-283	Yes (pdf)
E-2748 B		Brannalarmpanel BS-210 Skilt godkjenning	797-36975-283	Yes (pdf)
E-2749 B		Informasjonspanel BV-210 Skilt godkjenning	797-36975-283	Yes (pdf)
E-2751 B		Repeaterpanel BS-211 Skilt Godkjenning	797-36975-283	Yes (pdf)
E-2752 B		Brannmannspanel BU-210 Skilt godkjenning	797-36975-283	Yes (pdf)
E-3034 A		Type Label BV-110	3053331	Yes (jpeg_preview)
E-3042 A		Type Label BU-110	3053331	Yes (jpeg_preview)
M6078 A		Assembly Drawing BSR-421	3053331	Yes (pdf)
M6123 A		Assembly Drawing BSR-422	3053331	Yes (pdf)
UE-1767 Rev. B B		BS-200M Assembly drawing	3034449	Yes (pdf)
UE-1768 Rev. B B		BS-200 Assembly drawing	3034449	Yes (pdf)