Application Solutions.

Product Overview

ACU Series
Wall Mount Intellevac Audio Control Units

DESCRIPTION

The Wall Mount Intellevac ACU Audio Control Unit is the central point for controlling the distribution of audio in a network of physically distributed Slave Nodes, either wall mount Intellevac Distributed Amplifier Units (DAU) or rack mount systems.

The Intellevac BS5839 Network uses a RS485 data ring together with three audio rings, to allow for concurrent broadcast of ALERT, EVACUATE, and Fire Microphone audio. Both the audio and data network rings are tolerant to open and short circuit faults, and operate over MICC or other fire rated cables.

The flexibility of the PA/VA fire network controlled by the ACU to include both wall mount and rack mount Slave Nodes, allied with the capacity to support up to 120 network audio zones, make the Intellevac Network the ideal PA/VA solution for large sites.

The Wall Mount Intellevac ACU can feature dedicated buttons for playing DVA messages, and can have either 20, 40 or 60 zone selection buttons fitted, to work along with a built-in Fireman's microphone. These buttons are protected by a key-switch to prevent unauthorised operation. All-Call versions or versions with no built-in microphone are available.

The ACU allows a number of Secondary Audio Control Units (ACS) to be supported. The ACS acts as a secondary control panel, mimicking the ACU's audio broadcast functions.

Announcements and DVA messages initiated from the ACU, or any microphone or ACS connected to it, can be broadcast to any zone across the network. The ACU front panel's Status indicators display the emergency message status of the zones across the network.

The ACU includes 4 DVA messages, 3 network audio outputs, and 8 universal Mic/Line inputs, each of which can support an ASL multi-zone Paging Microphone or ACS. A ninth audio input is provided for miscellaneous functions such as background music. Inputs 1 & 2 support Fire Microphones, which act as an All-Call override across the whole network in the event of processor failure, as required by BS5839 Pt 8.

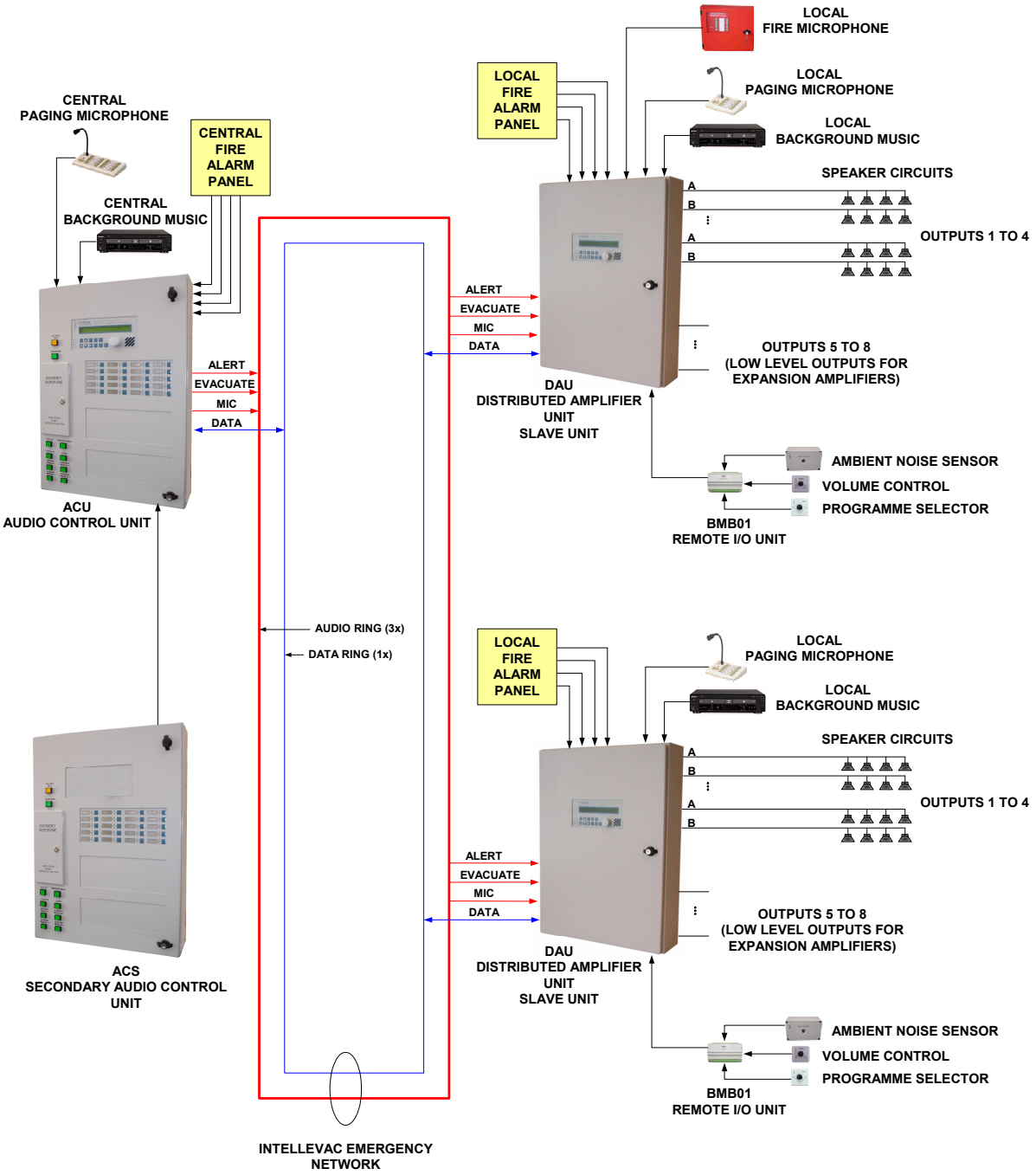
Fire Alarm Interfaces are built-in, including 6 opto-isolated sounder circuit inputs; a RS485 serial port; and a common fault output relay. On ordering, the opto-isolated inputs can be replaced with 4 non-isolated analogue inputs and 8 digital outputs if required.

The units include a built-in, fully monitored, temperature compensated charger, and space for a battery pack, which can be ordered from Application Solutions Limited.

A serial control port gives the ACU the ability to be remotely monitored and configured. The ACU also has a front panel display and control interface that provides functions for system commissioning, fault monitoring, and audio monitoring.

For further details, and for information on other products, please visit www.asl-electronics.co.uk.

APPLICATION DIAGRAM



SPECIFICATION

General

AC Supply Voltage ..... 230 V +10, –6 % RMS 50 Hz AC
Maximum AC Power Consumption .....2 A @ 230 V AC
DC Supply Voltage.....21 to 27.6 V
(from nominal 24 V lead acid battery)
Battery Capacity/Type for 24 h Standby +0.5 h Alarm
Back-up.....2 x 12 V 17.2 Ah Valve regulated SLA[1]
Yuasa Part No.: NP18–12
Auxiliary DC supply
for external equipment .....18 to 36 VDC @ 200 mA
Fault Log .....200 events
Real Time Clock (RTC) ..... Built-in
(externally synchronisable)
Format.....Wall mounting box
Colour ..... Light grey with light blue annotation

Audio Input

Balanced Audio Inputs ..... Inputs 1 to 8[2,3,4]
Sensitivity and Impedance..... –20 dBu (77 mV)
@ Z ≥20 kΩ
Unbalanced Audio Input..... Input 9
Sensitivity and Impedance..... Suits 1–2 V RMS units
Z ≥5 kΩ
Input Overload Margin.....40 dB
Input Attenuator Range .....0 to –63 dB
Equalisation.....3 band plus LF Cut

DVA

Play DVA Buttons.....Evacuate, Alert,
4xAux Message, All-Call, Message Reset
Digital Messages (DVA) ..... 2x50-second messages
2x66-second messages
DVA Bandwidth .....100 Hz to 8 kHz

Audio General

THD Input to Output ..... <0.1 % @1 kHz
Crosstalk .....>70 dB @1 kHz
Residual Noise .....<78 dBu (A)
S/N Line .....>70 dB (A)
Frequency Response
(Input to Output)..... 100 Hz to 20 kHz, –3 dB
Audio Monitoring
SPL from Loudspeaker (Sounder Mode) ... ≥50 dBA
@ 1 m from the equipment enclosure
Frequency Response (from Input through
to Speaker) ..... 200 Hz to 10 kHz –3 dB
Gain Range Control
(Front panel rotary encoder) .....0 to –63 dB

Network Audio Output

Outputs .....Outputs 1 to 3
Level .....+20 dBu
Graphic Equalisation.....±12 dB
@ 125, 250, 500, 1 k, 2 k, 4 k, 8 k, 16 kHz
Surveillance Tone .....10 dBu to –30 dBu
30 Hz Continuous
Gain Control Range .....0 dB to –63 dB

Audio Routing

ACU00
Zone Selection Buttons.....None
Microphone .....External microphone used

ACU01 (All-Call Version)
Zone Selection Buttons.....None, All-Call only
Microphone ..... Built-in fist microphone
with integral PTT switch

ACU20
Zone Selection Buttons.....20[5]
Microphone ..... Built-in fist microphone
with integral PTT switch

ACU40
Zone Selection Buttons.....40[4]
Microphone ..... Built-in fist microphone
with integral PTT switch

ACU60
Zone Selection Buttons.....60[4]
Microphone ..... Built-in fist microphone
with integral PTT switch

All Variants
Number of Concurrent Host Routes..... 20 (max.)
Number of Concurrent ACU-Instigated Routes . 50 (max.)
Override per Output ..... 40 (max.)

Control Ports

Digital Inputs [6]
Number of Digital Inputs ..... 6 opto-isolated interfaces
Interface.....Opto-isolated with
built-in resistor to suit voltages of +12 to +40 V

Analogue Inputs [5]
Number of Analogue Inputs 4
Interface..... Non-isolated analogue interfaces
with internal pull-up to +5 V by 4.7 kΩ
Input Voltage Threshold.....2.5V
Monitored Analogue Contact Thresholds
Faulty – Open Circuit: .....>3.7 V
Healthy – Inactive: .....2.5 V – 3.7 V
Indeterminate: .....0.8 V – 2.5 V
Healthy – Active: .....0.2 V – 0.8 V
Faulty – Short Circuit: .....<0.2 V

Digital Outputs [5]
Number of Digital Outputs..... 8
Interface..... Open-collector

[1] The ACU can be supplied without the batteries.
[2] Inputs 1 and 2: Hardwire bypass Fire Microphone inputs.
These inputs support a Fire Microphone, Zoned Fire Microphone, Paging Microphone, Single Button Microphone, or Miscellaneous Input.
Support up to 68 microphone buttons.
Input 1 is used by the built-in Fireman's microphone (all variants except ACU00).
[3] Inputs 3 to 8: Support Paging Microphone, Single Button Microphone, or Miscellaneous Input.
Support up to 20 microphone buttons.
[4] Adding additional microphones or ACS Secondary Audio Control Units may require the use of an additional external battery pack. Please contact ASL for guidance.
[5] Buttons are protected against unauthorised operation by a key-switch.
[6] Analogue inputs and digital outputs are available on ordering, and they replace the digital inputs, i.e, the unit does not support both digital inputs and analogue inputs/digital outputs.

Others

Changeover Fault Relay..... 1
Maximum Global Fault Relay Contact Current Rating: 500 mA

Open Collector Drive
(SPEAK NOW LED, ALL CALL LED)..... 100 mA
RS485 Port..... 1[7]
Up to 6 Remote I/O Units (BMB01)
RS232 Port..... 1
For mutually exclusive use by Intellevac network or Host PC for configuration[8]

Network

Network Audio Channels..... 1, 2 or 3
Network Outputs ..... 120 (max.)
Standard..... RS485
Data Rate ..... 38.4 kbaud
Distance between Nodes ..... 1 km (max.)
Network Control Response Time
(Fire Alarm trigger to DVA initiation)..... <1 second
Fault Tolerance ..... Any single open or short circuit can be detected and isolated

Dimensions and Weight

Dimensions (H x W x D) .... 700 mm x 510 mm x 160 mm
Weight..... 40 kg total weight
28 kg less batteries
12 kg weight of batteries

Environmental

Temperature
(Storage and Operating) ..... −5 °C up to +50 °C
Humidity Range ..... 0 % to 93 % Non-condensing

[7] The RS485 port may be temporarily disconnected from the Remote I/O Units, and connected to a Host PC for configuration purposes.
[8] The RS232 port may be temporarily disconnected from the network, and connected to a Host PC for configuration purposes.

CE This equipment is designed and manufactured to conform to the following EC standards:
EMC EN55103-1/E1, EN55103-2/E5, EN50121-4, EN50130-4, EN61000-6-3, ENV50204
Safety EN60065

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QUALITY ASSURED FIRM
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