E-RATE CLASSROOM AV SYSTEMS

Extron E-Rate Classroom AV Systems

Complete IP enabled audio video systems designed to meet the needs of K-12 classrooms

- Complete, centralized AV switching and control systems with stereo audio amplification
- Integrated network switching allows multiple devices to share a single Ethernet connection and Web-based control
- Systems use CAT 5-type cable for quick and easy connections and low-cost installation
- Extron exclusive Auto Power Save and Standby modes lower energy usage and reduce operating costs
- Systems are available for installations with a ceiling mounted projector, wall mounted short-throw projector, or flat–panel display

Extron. Electronics
INTERFACING, SWITCHING AND CONTROL

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

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Introduction

...ron pioneered **E-Rate** eligibility for classroom AV systems, providing a means for qualified districts to obtain vital technology for increasing student achievement at a discounted rate. But we didn't stop there. Extron has specifically designed the components, and configured the packages to provide the most effective performance in the widest variety of classroom environments.

Extron Classroom AV Systems are easy-to-use, network enabled, all-inclusive AV switching and control packages, making them ideal for single display K-12 classrooms. These systems use economical twisted pair cable for transmitting signals and include network connectivity for Web-based asset management, monitoring, and control.

Wide Variety of Classroom Environments

E-Rate eligible PoleVault and WallVault systems are available for almost any classroom display environment. This includes rooms with ceiling mounted projectors, wall mounted projectors, or wall mounted flat-panel displays.

PoleVault® Systems

PoleVault Systems are designed for classrooms with a ceiling mount projector. They include a pole mounted vault that securely mounts and conceals system components above the projector.

WallVault® Systems

WallVault Systems are designed for classrooms with a wall mount ultra short-throw projector or flat-panel display. They include a wall mount vault that securely mounts and conceals system components to a wall.

Complete Classroom AV

Each system includes all the necessary audio and video switching, network connectivity, audio amplification, system control, source connectivity, mounting, speakers, and cabling for a complete classroom AV solution. All that remains is to add the sources and video projector or flat-panel display. All components are designed, manufactured, and supported by Extron, ensuring that they will work together and function properly as a system.

Easy to Use

Each Extron Classroom AV System includes an easy-to-use MediaLink® Controller. This durable keypad controller was created specifically for K-12 classrooms. It centralizes all system control and is so intuitive that it requires little or no training.

Simplified Installation While Saving on Space

In typical classroom AV systems, audio and video switching and amplification devices are mounted in a lectern, or on a shelf or a desktop. Too often, the equipment is unsecured, unsightly cables are visible, and valuable floor space is used. Extron Classroom AV Systems securely mount the key products in a vault close to the display, so no equipment rack or tabletop space is required and cables are hidden away. Installation is further simplified through the use of CAT 5 twisted pair cable and wall mounted source signal transmitters.

Network Connectivity

Extron Classroom AV Systems include an IP enabled switcher/amplifier that serves as the Master Control Unit for audio, video, and networking functionality. It incorporates a four-port Ethernet switch, which allows up to three devices within the classroom to share a single network drop. This network connectivity also allows administrators and support personnel to manage, monitor, schedule, troubleshoot, and control systems remotely.

Energy Efficiency

Energy management and efficiency features have been built into Extron Classroom AV Systems. They incorporate two exclusive power saving features for lowering energy usage and reducing operating costs. Auto Power Save mode automatically shuts down the amplifier when not in use. Standby mode allows the power down of all peripheral components during scheduled periods of inactivity. In addition, systems support shutdown schedules and access restrictions to make sure displays and components are turned off when not in use. This further reduces energy expenses and extends the life of system components.

Plenum and UL® Rated Components

K-12 classrooms adhere to strict building codes to insure the safety of our children. PoleVault and WallVault systems come standard with components rated for use in plenum airspaces and conform to Underwriters Laboratories requirements for safety.

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E-Rate Eligibility

E-Rate is a program that provides discounts to US schools and libraries for affordable telecommunications and Internet access. The four service categories that are funded by the program include Telecommunications Services, Internet Access, Internal Connections, and Basic Maintenance. Discounts range from 20% to 90% for costs of eligible services, depending on the level of poverty and the urban or rural status of the population served.

The E-Rate Program is funded through the Universal Service fee charged to companies that provide interstate and/or international telecommunications services. The Universal Service Administrative Company, USAC, administers the Universal Service Fund at the direction of the Federal Communications Commission. USAC's Schools and Libraries Division, SLD, administers the E-Rate Program.

Distribution of E-Rate funds is divided into two major categories. Priority 1 funding applies to Telecommunications Services and Internet Access. These services are used to communicate information electronically between sites. Priority 2 funding applies to Internal Connections and Basic Maintenance. These categories consist of components, wiring, and maintenance associated with expanding data access within a school and its classrooms.

E-Rate eligible items from Extron fall into the Priority 2, Internal Connections category. Our Service Provider Identification Number, SPIN, is 143034221. The table below outlines Extron E-Rate systems and their level of eligibility.
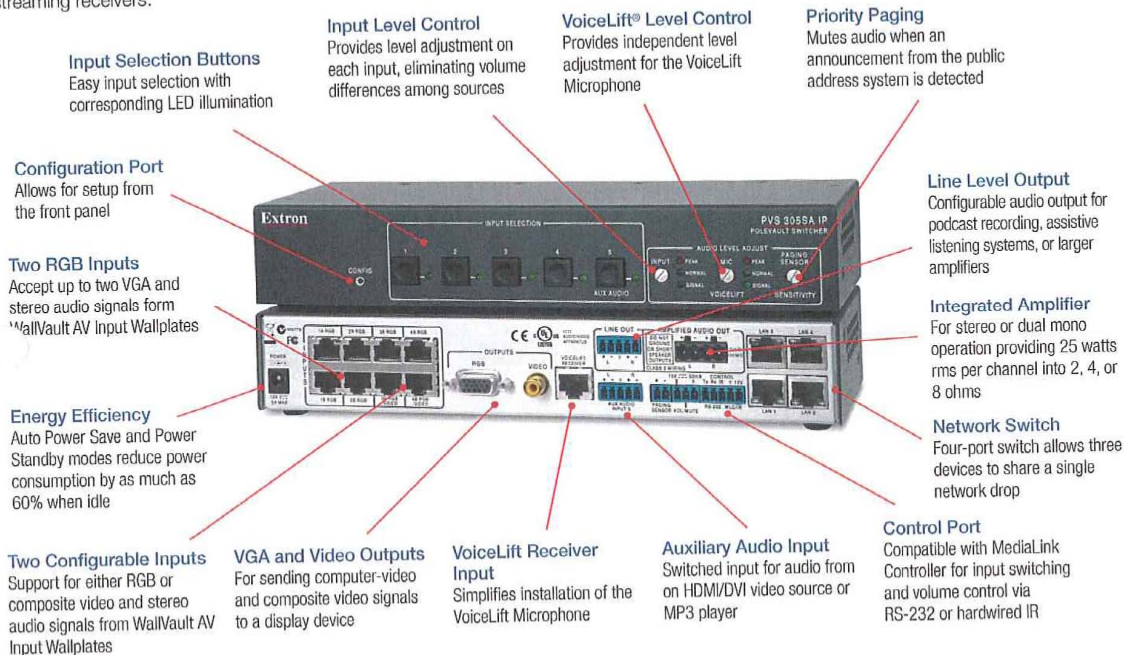
Model	Description	Part Number	Eligibility
PVS 200IP Plus	Two Input PoleVault IP Plus System	80-200-13	84%
PVS 300IP Plus	Three Input PoleVault IP Plus System	80-300-13	85%
PVS 400IP Plus	Four Input PoleVault IP Plus System	80-400-13	86%
WVS 200IP-ST	Two Input WallVault IP, short throw	80-210-13	88%
WVS 300IP-ST	Three Input WallVault IP, short throw	80-310-13	89%
WVS 400IP-ST	Four Input WallVault IP, short throw	80-410-13	90%
WVS 210IP-WM	Two Input WallVault IP, wall mount	80-220-03	91%
WVS 310IP-WM	Three Input WallVault IP, wall mount	80-320-03	92%
WVS 410IP-WM	Four Input WallVault IP, wall mount	80-420-03	92%

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System Switcher

The Extron **PVS 305SA IP** switcher offers two high resolution RGB computer-video signals with stereo audio and two configurable inputs that support either RGB or composite video with stereo audio. Switching and volume are controlled via IR or RS-232 using the MediaLink Controller included with the E-Rate systems.

The PVS 305SA IP features an integrated 50 watt rms stereo audio amplifier capable of driving up to eight Extron speakers and filling the room with full, rich sound. The integrated audio amplifier features software-based bass, treble, and loudness control for set-and-forget operation.

Also included in the PVS 305SA IP is an integrated four- port network switch. This allows up to three devices within the classroom to share a single network drop. One connection is used for the Medialink Controller in the classroom to provide remote control, scheduling, and troubleshooting of the system. The two remaining ports provide network connectivity for other devices in the room such as PCs, laptops, or streaming receivers.

Input Selection Buttons
Easy input selection with corresponding LED illumination

Input Level Control
Provides level adjustment on each input, eliminating volume differences among sources

VoiceLift® Level Control
Provides independent level adjustment for the VoiceLift Microphone

Priority Paging
Mutes audio when an announcement from the public address system is detected

Configuration Port
Allows for setup from the front panel

Two RGB Inputs
Accept up to two VGA and stereo audio signals form WallVault AV Input Wallplates

Energy Efficiency
Auto Power Save and Power Standby modes reduce power consumption by as much as 60% when idle

Line Level Output
Configurable audio output for podcast recording, assistive listening systems, or larger amplifiers

Integrated Amplifier
For stereo or dual mono operation providing 25 watts rms per channel into 2, 4, or 8 ohms

Network Switch
Four-port switch allows three devices to share a single network drop

Control Port
Compatible with MediaLink Controller for input switching and volume control via RS-232 or hardwired IR

Two Configurable Inputs
Support for either RGB or composite video and stereo audio signals from WallVault AV Input Wallplates

VGA and Video Outputs
For sending computer-video and composite video signals to a display device

VoiceLift Receiver Input
Simplifies installation of the VoiceLift Microphone

Auxiliary Audio Input
Switched input for audio from on HDMI/DVI video source or MP3 player
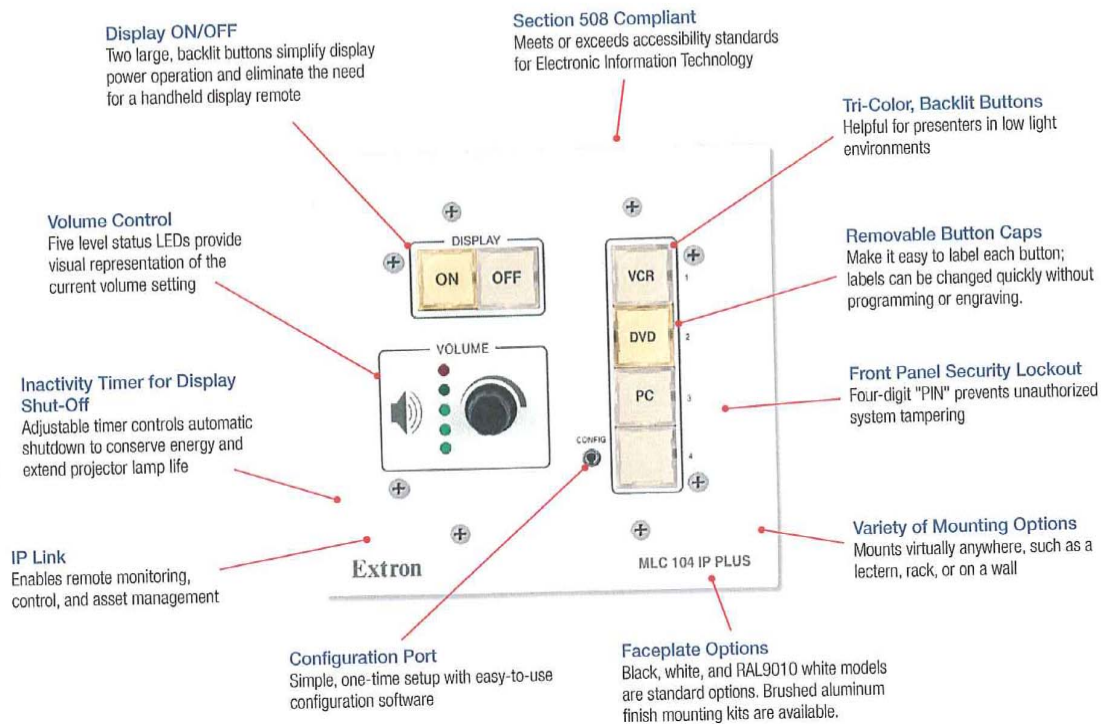
FEATURES

- Available exclusively as part of an Extron E-Rate Classroom AV System
- Receives VGA computer video, composite-video, Ethernet, and stereo audio signals from AV input wallplates
- Integrated 50 watt rms audio amplifier for stereo or dual mono
- Receives audio and video signals and provides power to AV input wallplates over CAT 5 UTP cable
- Integrated four-port network switch allows three classroom devices to share a single network drop
- VoiceLift Receiver input simplifies installation of the VoiceLift Microphone
- A switched auxiliary audio input provides support for audio from an HDMI/DVI video source or MP3 player
- Independent input sensitivity adjustments are provided for program audio and VoiceLift Microphone
-      onfigurable audio line output for podcast recording, assistive listening systems, or adding an additional amplifier
- Paging sensor input mutes program audio when a public address system announcement is detected by the optional Priority Page Sensor Kit (part# 70-619-01)
- Software-based tone and dynamics for audio adjustments to meet the needs of the acoustic environment
- Auto power save and Standby modes provide energy efficiency to reduce operating costs
- External power supply included

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System Controller

MLC 104 IP Plus Medialink® Controller

The Extron **MLC 104 IP Plus** MediaLink Controller with built-in IP Link® Ethernet Control is an easy-to-use control panel included in standard Extron E-Rate Classroom Systems. It is designed to simplify operation of the classroom AV system and enables Web-based remote diagnostics, asset management, and support. When E-Rate Systems are installed in multiple classrooms, the MLC 104 IP Plus standardizes the control interface, making AV systems simple to use for anyone.

Display ON/OFF
Two large, backlit buttons simplify display power operation and eliminate the need for a handheld display remote

Section 508 Compliant
Meets or exceeds accessibility standards for Electronic Information Technology

Tri-Color, Backlit Buttons
Helpful for presenters in low light environments

Volume Control
Five level status LEDs provide visual representation of the current volume setting

Removable Button Caps
Make it easy to label each button; labels can be changed quickly without programming or engraving.

Inactivity Timer for Display Shut-Off
Adjustable timer controls automatic shutdown to conserve energy and extend projector lamp life

Front Panel Security Lockout
Four-digit "PIN" prevents unauthorized system tampering

IP Link
Enables remote monitoring, control, and asset management

Variety of Mounting Options
Mounts virtually anywhere, such as a lectern, rack, or on a wall

Configuration Port
Simple, one-time setup with easy-to-use configuration software

Faceplate Options
Black, white, and RAL9010 white models are standard options. Brushed aluminum finish mounting kits are available.

FEATURES

- Bidirectional RS-232 port for universal display control
- Three digital I/O ports configurable as a digital input or digital output for sensors, switches, LEDs, and relays
- Dedicated IR port for control of IR-controllable display devices and source equipment, such as VCRs and DVD players
- IR learning capability for capturing IR remote codes from a device's handheld remote control
- Adjustable timer controls automatic shutdown to preserve energy and extend projector lamp life
- Front panel security lockout prevents unauthorized tampering
- Tri-color, backlit, easy-to-label buttons
- Volume control knob with volume indication
- IP Link Ethernet monitoring and control
- Integral high performance Web server with 7.25 MB flash memory for storing device drivers, GlobalViewer, and custom user Web pages

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PoleVault IP Plus Systems

EACH STANDARD SYSTEM INCLUDES THE FOLLOWING CORE COMPONENTS

- One PVS 305SA IP Switcher/Amplifier
- One MLC 104 IP Plus MediaLink Controller
- One PCM 340 Projector Drop Ceiling Mount with Adjustable Pole
- One PMK 550 Pole Mount Kit
- One UPB 25 Universal Projector Bracket - White
- One pair of FF 120 plenum-rated Flat Field Speakers
- One length of SPK 18 Precut Speaker Cable - Plenum, 35' (10.6 m)
- One MLC IR/RS-232 Projector Communication Cable - Plenum, 50' (15.2 m)
- One MLC PW/RS-232/VC Power, Switcher Communications Cable - Plenum, 50' (15.2 m)
- One composite video cable – 3' (1 m)
- One MVGA M-M Male to Male Micro VGA Cable – 3' (1 m)
- Three lengths of CAT 5 twisted pair cable for network switch access – Plenum, 50'(15.2 m)
- Two, three, or four exclusive AV input wallplates – see below
- One or two lengths of CAT 5 twisted pair cable per wallplate – Plenum, 50' (15.2 m)

The only difference between the systems is the quantity and type of AV input wallplates and video cables included.
See unique features for each system.

PVS 200IP Plus
Two Input PoleVault IP Plus System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate

Model	Version Description	Part Number
PVS 200IP Plus	Two Input PoleVault IP Plus System	80-200-13

PVS 300IP Plus
Three Input PoleVault IP Plus System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplate
- Additional VGA input wallplate provides increased flexibility for adding an additional VGA source, such as a laptop or document camera

Model	Version Description	Part Number
PVS 300IP Plus	Three Input PoleVault IP Plus System	80-300-13

PVS 400IP Plus
Four Input PoleVault IP Plus System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes two PVT CV D - Composite Video and Stereo Audio - Decora Wallplate
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplate
- Additional video input wallplate provides increased flexibility for adding an additional composite video source, such as a tuner

Model	Version Description	Part Number
PVS 400IP Plus	Four Input PoleVault IP Plus System	80-400-13

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Four Input PoleVault IP Plus System
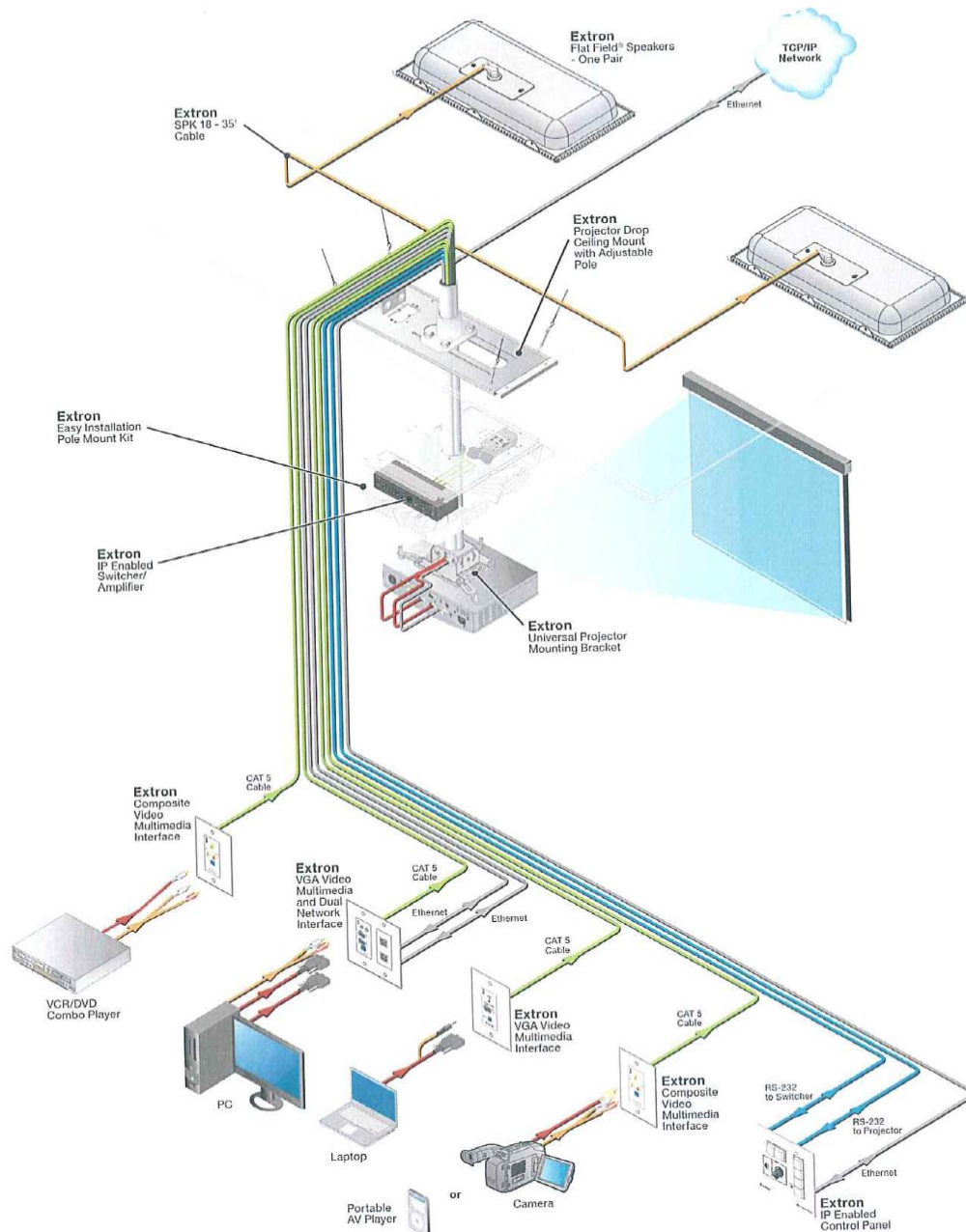
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WallVault IP Short Throw Systems

EACH STANDARD SYSTEM INCLUDES THE FOLLOWING CORE COMPONENTS

- One PVS 305SA IP Switcher/Amplifier
- One MLC 104 IP Plus MediaLink Controller
- One VSFM 100 Short-Throw Projector Mount and Equipment Enclosure
- One UPB 25 Universal Projector Bracket – White
- One pair of FF 120 plenum-rated Flat Field® Speakers
- Two lengths of SPK18 Precut Speaker Cable – Plenum, 35' (10.6 m)
- One MLC IR/RS-232 Projector Communication Cable – Plenum, 50' (15.2 m)
- One MLC PW/RS-232/VC Power, Switcher Communications Cable – Plenum, 50' (15.2 m)
- One composite video cable – 6' (1.8 m)
- One MVGA M-M Male to Male Micro VGA Cable – 6' (1.8 m)
- Three lengths of CAT 5 twisted pair cable for network switch access – Plenum, 35' (10.6 m)
- Two, three, or four exclusive AV input wallplate – see below
- One or two lengths of CAT 5 twisted pair cable per wallplate – Plenum, 35' (10.6 m)

The only difference between the systems is the quantity and type of AV input wallplates and video cables included.
See unique features for each system.

WVS 200IP-ST
### Two Input WallVault IP Short Throw System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate

Model	Version Description	Part Number
WVS 200IP-ST	Two Input WallVault IP, short throw	80-210-13

WVS 300IP-ST
Three Input WallVault IP Short Throw System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplate
- Additional VGA input wallplate provides increased flexibility for adding an additional VGA source, such as a laptop or document camera

Model	Version Description	Part Number
WVS 300IP-ST	Three Input WallVault IP, short throw	80-310-13

WVS 400IP-ST
Four Input WallVault IP Short Throw System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes two PVT CV D - Composite Video and Stereo Audio - Decora Wallplates
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplates
- Additional video input wallplate provides increased flexibility for adding an additional composite video source, such as a tuner

Model	Version Description	Part Number
WVS 400IP-ST	Four Input WallVault IP, short throw	80-410-13

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Four Input WallVault IP Short Throw System

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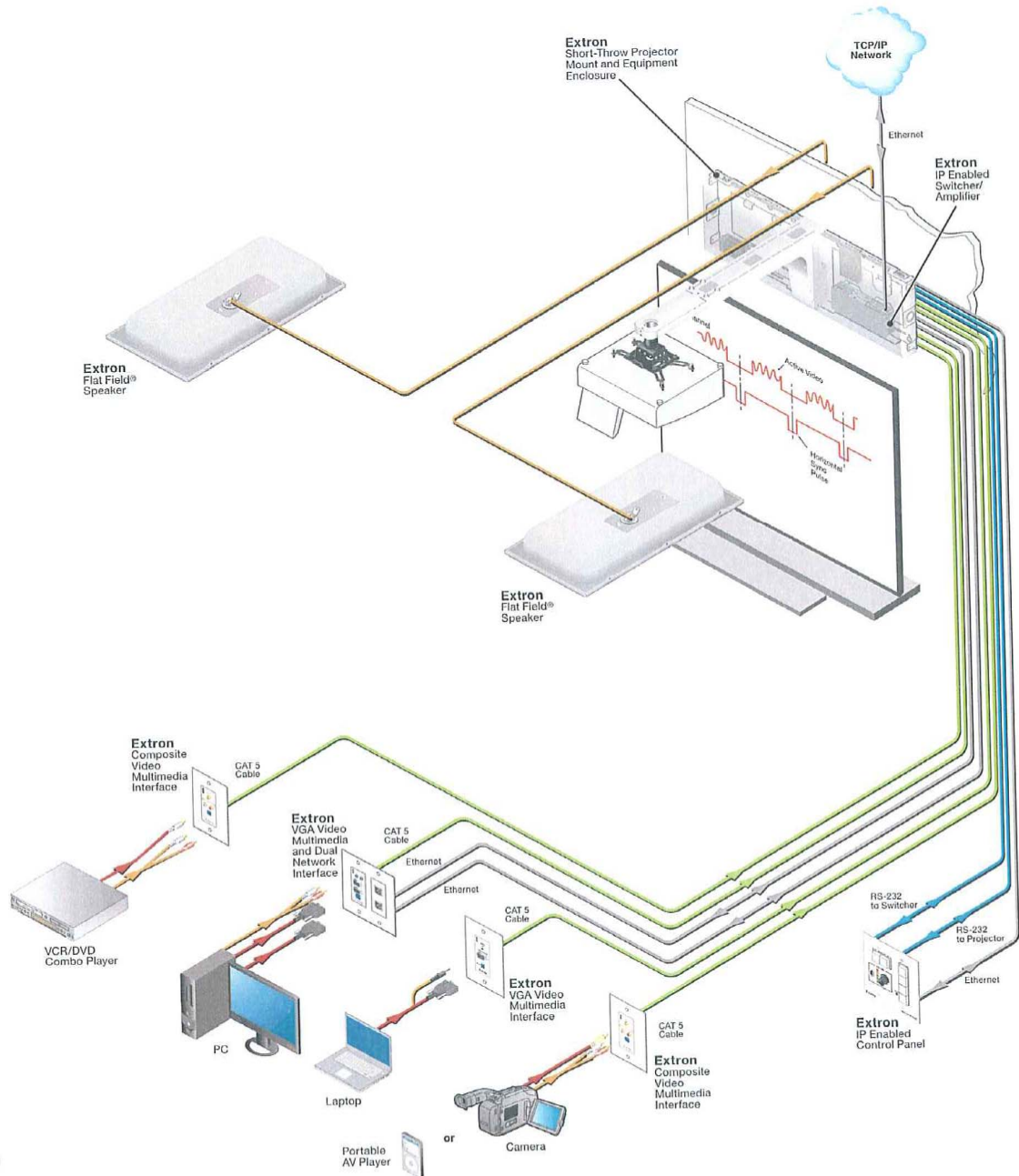
WallVault IP Wall Mount Systems

EACH STANDARD SYSTEM INCLUDES THE FOLLOWING CORE COMPONENTS

- One PVS 305SA IP Switcher/Amplifier
- One MLC 104 IP Plus MediaLink Controller
- One WMK 150 Wall Mount Kit
- One pair of FF 120 plenum-rated Flat Field Speakers
- Two lengths of SPK 18 Precut Speaker Cable - Plenum, 35' (10.6 m)
- One MLC IR/RS-232 Projector Communication Cable - Plenum, 50' (15.2 m)
- One MLC PW/RS-232/VC Power, Switcher Communications Cable - Plenum, 50' (15.2 m)
- One composite video cable - 15' (4.5 m)
- One MVGA M-M Male to Male Micro VGA Cable - 15' (4.5 m)
- Three lengths of CAT 5 twisted pair cable for network switch access – Plenum, 35' (10.6 m)
- Two, three, or four exclusive AV input wallplates – see below
- One or two lengths of CAT 5 twisted pair cable per wallplate – Plenum, 35' (10.6 m)

The only difference between the systems is the quantity and type of AV input wallplates and video cables included. See unique features for each system.

WVS 210IP-WM
**Two Input WallVault IP Wall Mount System**

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate

Model	Version Description	Part Number
WVS 210IP-WM	Two Input WallVault IP, wallmount	80-220-03

WVS 310IP-WM
Three Input WallVault IP Wall Mount System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes one PVT CV D - Composite Video and Stereo Audio - Decora Wallplate
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplate
- Additional VGA input wallplate provides increased flexibility for adding an additional VGA source, such as a laptop or document camera

Model	Version Description	Part Number
WVS 310IP-WM	Three Input WallVault IP, wallmount	80-320-03

WVS 410IP-WM
Four Input WallVault IP Wall Mount System

Unique Features
- Includes one PVT RGB D IP Plus – VGA Video, Stereo Audio, Monitor Output and Network Pass-through - Decora Wallplate
- Includes two PVT CV D - Composite Video and Stereo Audio - Decora Wallplates
- Includes one PVT RGB D - VGA Video and Stereo Audio - Decora Wallplates
- Additional video input wallplate provides increased flexibility for adding an additional composite video source, such as a tuner

Model	Version Description	Part Number
WVS 410IP-WM	Four Input WallVault IP, wallmount	80-420-03

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Four Input WallVault IP Wall Mount System

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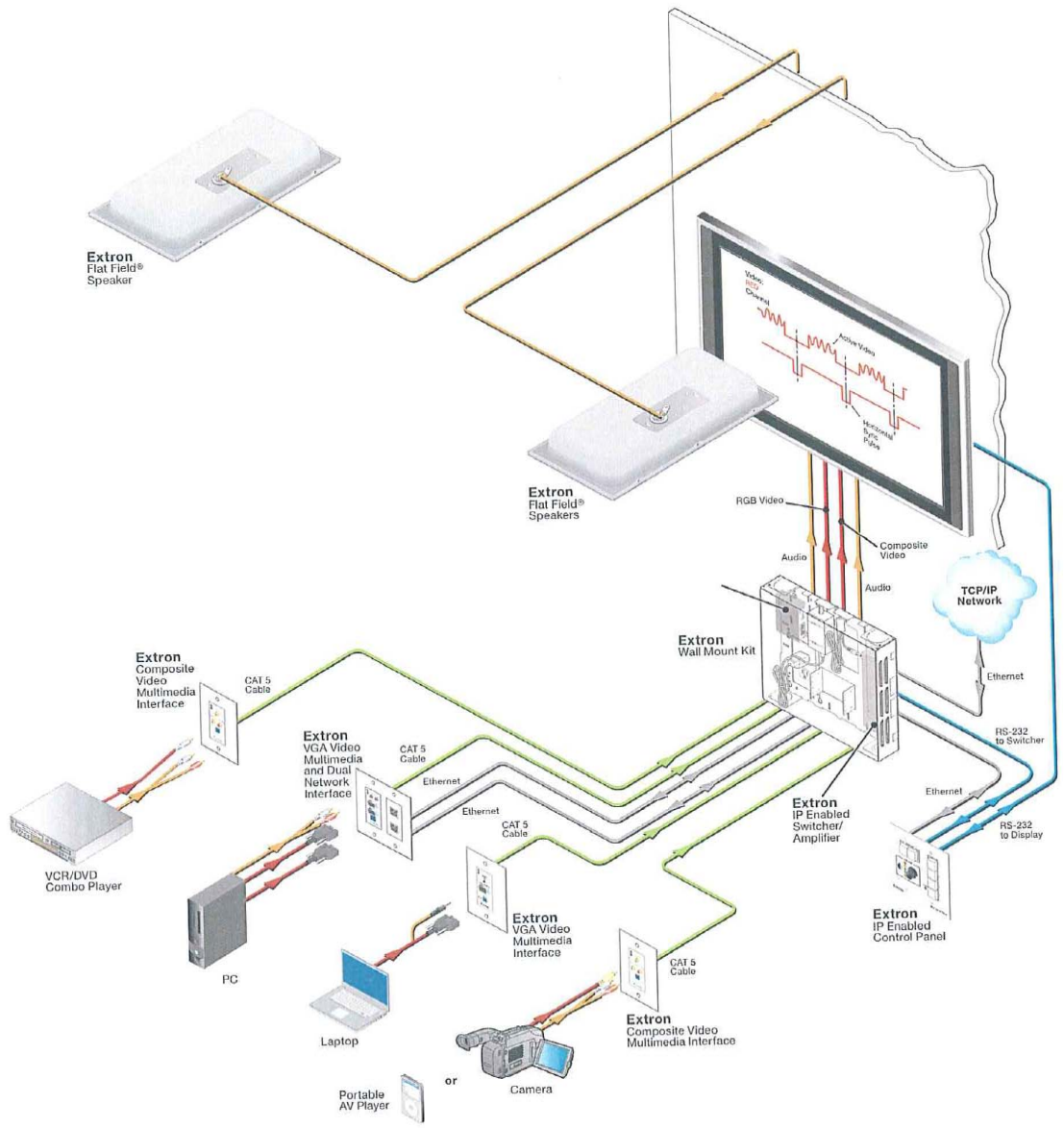
Featured Installations and Grant Program

SCHOOL DISTRICTS STANDARDIZING ON EXTRON POLEVAULT®, WALLVAULT®, AND VOICELIFT® SYSTEMS

Extron is the leading manufacturer of classroom AV solutions. Our classroom systems are designed to enable complete AV technology integration that offers benefits for teachers, students, and administrators alike. PoleVault and WallVault Systems are complete, centralized AV switching and control systems that are easy to install, use, and support. These systems include all the necessary audio and video switching, audio amplification, system control, source connectivity, speakers, and cabling for a complete classroom AV solution. All that remains is to add a video projector and screen, or flat panel display, and sources. VoiceLift® Microphone is an infrared wireless microphone system designed to evenly distribute the teacher's voice throughout the classroom. Studies show that voice amplification systems such as VoiceLift increase student achievement and reduce teacher health issues related to voice fatigue. VoiceLift also includes an Instant Alert feature that enables the teacher to request assistance with the push of a button. Feel free to contact us directly with any questions you may have on our classroom systems. Or ask a colleague from one of the districts below about their experience with Extron.

Bartholomew CSC - IN	Kings Local - OH
Center Grove CSC - IN	Leander ISD - TX
Clark County SD - NV	Orange Unified - CA
Davis District - UT	Placentia-Yorba Linda USD - CA
Del Valle ISD - TX	Poway Unified - CA
Eagle Pass ISD - TX	San Ysidro Elementary - CA
Greater Albany PSD - OR	Shelbyville Central - IN
Huntington Beach UHS - CA	Spring Lake Park PS - MN
Indian River - FL	St. Vrain Valley SD - CO
Jefferson R-1 - CO	Upland Unified - CA
Johnston CSD - IA	Wylie ISD - TX

EXTRON CLASSROOM AV SYSTEM GRANT PROGRAM

The Extron Classroom AV System Grant Program has provided over $4 million in classroom technology to US school districts. More than 750 classrooms have been granted to enable district technology leaders, administrators, and instructors to evaluate and define audiovisual system standards that can be implemented in additional classrooms. The main goal of the Extron grant program is to provide increased visibility and expanded access for K-12 classroom AV technology, by supplying selected pilot classrooms with advanced audio/video solutions at no cost to the district. Each grant award includes installation of Extron classroom AV system technology, VoiceLift® Microphone, and complete training. Applying for the Extron Classroom AV System Grant is easy using the online form available at www.extron.com/grant. There is no need to commit valuable resources to generating a lengthy grant proposal. Simply provide your contact information and location, as well as details on your classroom environment. Once your information has been submitted, an Extron Grant Administrator will review the application and contact you to discuss your project.

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ST670 / ST670-S
ST670P / ST670P-S

SmartMount®
Universal Tilt Wall Mount
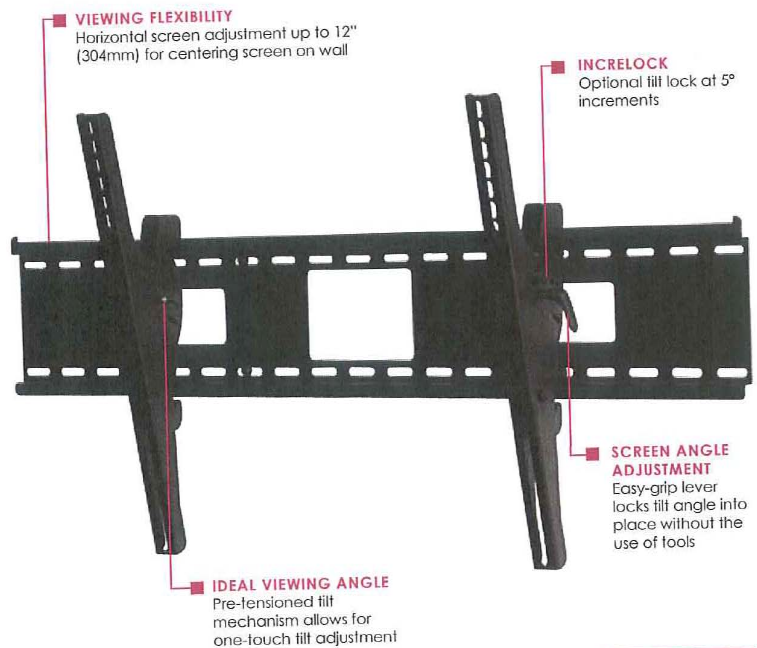## for 42" to 71" Flat Panel Screens

Enhance the installation experience with the ST670. Its wall plate holds screens weighing up to 250lb while featuring junction box access ports and horizontal screen adjustment up to 12" for ideal screen positioning. Its exclusive pre-tensioned screen adapter design offers one-touch tilt viewing adjustment enabling putting the final touches on the installation increasingly fast and simple.

Screen size: 42"-71"   Max load: 250lb (113kg)

FEATURES

- Universal mount fits screens with mounting patterns up to 36" W x 20" H (915 x 503mm)

- Adjustable up to 15° of forward tilt and -5° backward tilt for optimal viewing angle

- Pre-tensioned universal tilt screen adapters allow for tilt adjustment without the use of tools

- Easy-grip lever locks the screen position into place

- Optional IncreLock™ feature offers fixed tilt angles of -5°, 0°, 5°, 10°, 15°

- Horizontal screen adjustment of up to 12" (304mm) (depending on screen model) for perfect screen placement

- Universal screen adapters easily hook onto wall plate for fast installation

- Mounts to wood studs, concrete, cinder block or metal studs (metal stud accessory required)

- Comes with Peerless' Sorted-for-You™ fastener pack with all necessary screen attachment hardware

- Integrated security options available

- UL listed

VIEWING FLEXIBILITY
Horizontal screen adjustment up to 12" (304mm) for centering screen on wall

INCRELOCK
Optional tilt lock at 5° increments

SCREEN ANGLE ADJUSTMENT
Easy-grip lever locks tilt angle into place without the use of tools

IDEAL VIEWING ANGLE
Pre-tensioned tilt mechanism allows for one-touch tilt adjustment

Adjustable +15/-5° tilt

RoHS   MADE IN USA

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Model Numbers

ST670(-S)	Universal Tilt Wall Mount for 42" to 71" Flat Panel Screens - security models
ST670P(-S)	Universal Tilt Wall Mount for 42" to 71" Flat Panel Screens - standard models

Product Specifications

	DIMENSIONS (W x H x D)	PRODUCT WEIGHT	LOAD CAPACITY	FINISH	AVAILABLE COLORS
ST670(P)(-S)	37.75" x 20.62" x 3.04" (959 x 524 x 77mm)	12.97lb (5.8kg)	250lb (113kg)	Scratch resistant fused epoxy	ST670(P): Black ST670(P)-S: Silver

Package Specifications

	PACKAGE SIZE (W x H x D)	PACKAGE SHIP WEIGHT	PACKAGE UPC CODE	PACKAGE CONTENTS	UNITS IN PACKAGE
ST670(P)(-S)	46.75" x 8.63" x 3.88" (119 x 219 x 99mm)	15.4lb (6.98kg)	ST670: 735029242277 ST670-S: 735029242291 ST670P: 735029242284 ST670P-S: 735029242307	Wall plate, universal screen adapters, mounting and screen attachment hardware	1

Accessories

ACC415:	4-pack Metal Stud Fastener Kit
ACC615:	6-pack Metal Stud Fastener Kit
ACC309:	Video Conference Shelf

All dimensions = inch (mm)

WALL PLATE

VERTICAL BRACKET

ISOMETRIC VIEW

FRONT VIEW

SIDE VIEW

SIDE VIEW 15° TILT
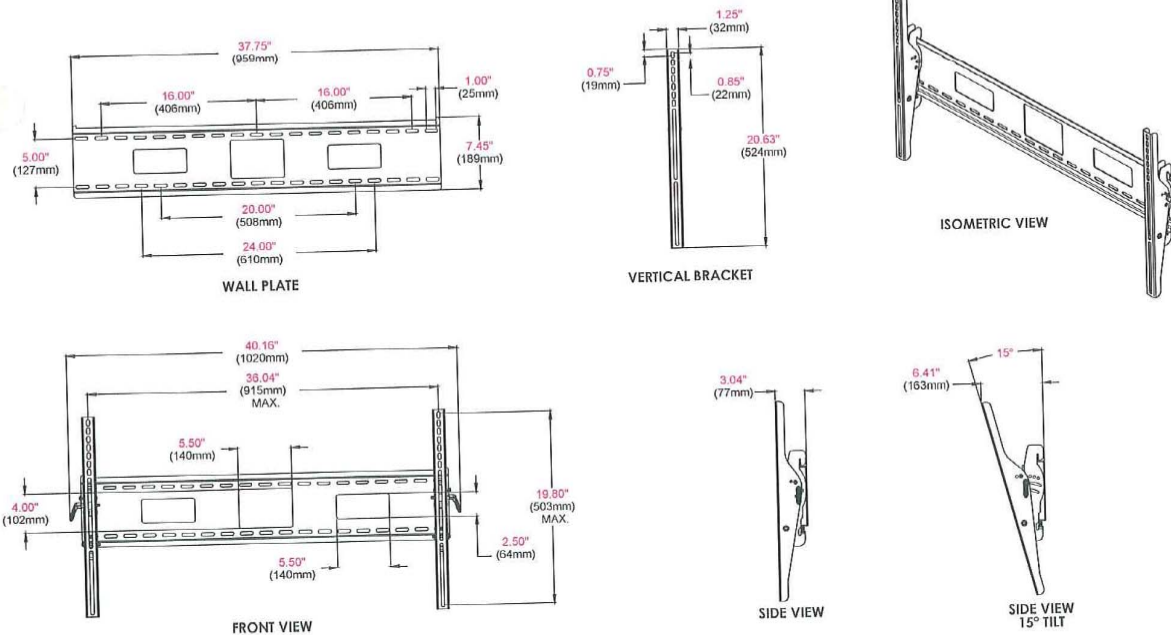
ARCHITECTS SPECIFICATIONS

The Smartmount® Universal Tilt Wall Mount shall be a Peerless model ST670 and shall be located where indicated on the plans.
It shall be constructed of heavy gauge cold rolled steel and finished with scratch resistant Black or Silver Fused Epoxy.
Assembly and installation shall be done according to instructions provided by the manufacturer.

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EXHIBIT B

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BOSCH
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D9412GV3 Control Panel

► Fully integrated intrusion, fire, and access control allows users to interface with one system instead of three

► Conettix IP-based communication options provide high-speed, secure alarm transport and control through connection of up to two wired (DX4020) and/or wireless (ITS-DX4020-G) network interfaces

► Up to 32 programmable areas with perimeter and interior partitioning

► 246 points with flexible configuration options to meet multiple installation requirements

► Commercial Wireless allows up to 238 RF points

► Up to 16 supervised keypads (vacuum fluorescent, ATM style, or touch-screen keypads available)

The D9412GV3 Control Panel delivers a powerful new solution for intrusion, access control, and fire alarm system applications. The control panel includes a communicator that sends events to selected public switched telephone network (PSTN), IP network, or general packet radio service (GPRS) destinations through four programmable route groups. The control panel provides up to 246 individually identified points. Each point:

- Accommodates normally-open (NO) and normally-closed (NC) devices with end-of-line (EOL) resistor supervision
- Is programmable for fire, fire supervisory, or intrusion applications.

With the D9412GV3 you can:

- Monitor alarm points for intruder or fire alarms while operating user keypads and other outputs
- Program all system functions locally or remotely (attended or unattended) through Remote Programming Software (RPS); program critical parameters on-site through a keypad.
- Add up to eight doors of access control using the optional D9210BLC Access Control Interface Module.

Functions

Programmable Outputs

- 2 A alarm power at 12 VDC
- 1.4 A auxiliary power at 12 VDC

- Four alarm-output patterns
- Programmable bell test

System Response

- High-performance micro-controller provides industry-leading system response
- 31 custom point indexes, including fire supervisory
- Selectable point response time
- Cross point capability
- Fire alarm verification
- Fire inspector's local test
- Watch mode
- Scheduled events (skeds) arm, disarm, bypass and unbypass points, control relays, control authority levels, and control door access

User Interface

- Supervision of up to 16 keypads (up to 32 unsupervised keypads can be used)
- Custom keypad text is fully programmable, including remote programming
- Full function command menu including custom functions
- Authority by area and 16-character name for each user
- 14 custom authority levels control user's authority to change, add, or delete passcodes or access control credentials; to disarm or bypass points; and to start system tests

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Area Configurations

Area programming offers a wide selection of different system configurations. Each area is assigned an account number to define annunciation, control, and reporting functions. Multiple areas can be linked to a shared area which is automatically controlled (hallway or lobby). Area arming can be conditional on other areas (master or associate). Any area can be configured for perimeter and interior arming, not requiring a separate area for this function.

Two Man Rule

Two Man Rule provides added security by requiring:

- Two people present at opening
- Two unique passcodes on the same keypad to disarm an area

Without the second passcode, the system denies entry.

Early Ambush

Early Ambush requires two passcode entries on the same keypad. Enter the same passcode twice or have two unique passcodes, depending on the configuration. The first entry disarms the area and the second entry stops a timer programmed to send a duress event. If the second entry does not occur within the programmed time, the system generates a duress event. Early Ambush allows users to inspect the premises and use the system to confirm that the area is safe to enter, providing added security.

Easy Exit Control

The D9412GV3 Control Panel changes from one armed state to another armed state without disarming. For example, if you change the state from Master Arm to Perimeter Arm, the control panel complies and reports the change. Easy Exit Control reduces the number of keystrokes, simplifying system operation.

Programmable Passcode-controlled Menu List

The system prompts users to enter a passcode prior to viewing the keypad menu. The keypad display shows the user the menu options allowed according to the user's authority level. Passcode-controlled menus provide users only with the options and information pertinent to them, simplifying system operation.

Passcode Follows Scope

Use Passcode Follows Scope to restrict passcode arming and disarming to the keypad's immediate local area, even if the keypad can report events from other areas. Passcode Follows Scope simplifies the arming and disarming procedure without limiting any other keypad capabilities.

Invisible Walk Test

A menu item allows the user to test invisible 24-hour points within the scope of the keypad without sending a report to the central station.

Door-Activated Custom Function

A custom function activates when user credentials are presented to a D9210B door controller's reader. The custom function behaves as though the user performed a function at the keypad associated with the door controller.

Passcodes

User passcodes contain three to six digits. Assign each user one of 14 customized authority levels in each area. Restrict passcodes to operate only during certain times.

The Two Man Rule and Early Ambush options require two passcodes, providing additional security in financial establishments such as banks.

Communications

The D9412GV3 Control Panel prioritizes and sends reports in Contact ID or Modem IIIa^2 communications formats to four route groups. Each group has a programmable primary and backup destination.

The D9412GV3 provides flexible communications for most central stations with reporting capabilities such as:

- Individual point numbers
- Opening or closing reports by user and area number
- Remote programming attempts
- Diagnostic reports

The D9412GV3 uses the DX4020 Ethernet Network Interface Module and/or the ITS-DX4020-G GPRS/GSM Communicator to communicate with the Conettix D6600 and D6100i Communications Receiver/Gateways. Using Conettix IP communication offers a secure path that includes anti-replay/anti-substitution features and provides enhanced security with encryption. Both the DX4020 and ITS-DX4020-G can be used for remote programming.

Security and Fire Detection

The D9412GV3 Control Panel provides eight on-board points, and up to 238 additional off-board points (depending on model and expansion interfaces). You can program individual points to monitor all types of burglar alarms, fire alarms, and supervision devices.

Commercial Wireless

The Commercial Wireless platform, powered by Inovonics wireless mesh network technology, ensures superior range, reliability, and scalability for commercial applications. Using a wide range of transmitters and repeaters, this proven technology provides flexibility and performance to meet the most stringent requirements. This exclusive protocol is available only on Commercial Wireless products.

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The Commercial Wireless platform sends redundant information on several multi-frequency channels within the FCC Part 15 900 MHz band, providing superior range and reliability. In comparison, systems that use a single frequency technology can only send information on one narrow band channel. Any interference within the band can cause missed signals. With wireless registration, it is easy to add this technology to any application.

Event Log

The event log stores up to 1,000 local and transmitted events. The event log includes time, date, event, area, point, and user number. View the event log from a keypad or use RPS to remotely retrieve event information. RPS operators can retrieve events periodically using one phone call, rather than receiving several calls each day. When the event log reaches a programmed threshold of stored events, it can send an optional report to a receiver.

Access Control

The D9412GV3 provides custom door strike, point shunt and auto disarming response by area. There are 14 panel-wide access levels with both manual and scheduled control.

Store, view, or print access events such as:

- Access granted
- No entry
- Request-to-enter
- Request-to-exit

Scheduled Events (Skeds)

The internal clock and calendar start individually scheduled events (skeds). Skeds perform functions such as arm or disarm, relay control, or point bypassing. The D9412GV3 Control Panel offers:

- 40 scheduled events with up to 25 different functions
- Eight opening windows and eight closing windows
- Eight user windows
- Day-of-week, date-of-month, or holiday only schedules
- Four holiday schedules of 366 days each (leap year)

Fire Test

When a user activates Fire Test Mode, the control panel suppresses all reports to the central station. The keypad and annunciator show all testing data. An automatic sensor reset feature saves time; you do not need to reset the sensors manually. At the end of test, the keypad shows the number of untested points.

Programming, Diagnostics and Controls

Installers can do limited programming on-site with a keypad (critical parameters; such as, .Account IDs, Central Station and RPS IP addresses and phone numbers, reporting formats, and such).They can also do full programming on-site or remotely (attended or unattended) with RPS. A programmable system passcode prevents unauthorized remote programming.

D9412GV3 Control Panels accommodate up to four separate destinations for primary, alternate, and backup receivers for automatic test reports.

When resetting alarms or arming or disarming a system, the user is identified by name and number.

ROM Updates

An on-site flash update key provides for easy feature enhancements without replacing ROM chips.

Certifications and Approvals

Region	Certification	
USA	UL	AMCX: Central Station Alarm Units (ANSI/UL 1610 and 1635); AMTB: Control Panels, SIA False Alarm Reduction (UL 864 and ANSI/SIA CP-01-2000); AOTX: Local Alarm Units (ANSI/UL 609 and ANSI/UL 464); APAW: Police Station Alarm Units (ANSI/UL 365 and ANSI/UL 464); APOU: Proprietary Alarm Units (ANSI/UL 1076); NBSX: Household Burglar Alarm System Units (ANSI/UL 1023); UOJZ: Control Units, System (ANSI/UL 864); UTOU: Control Units and Accessories, Household System Type (ANSI/UL 985)
	FM	
	CSFM	7165-1615:0238 FIRE ALARM CONTROL UNIT (COMMERCIAL) 7167-1615:0239 CONTROL UNIT (HOUSEHOLD)
	FDNY-CoA	6059
	FCC	Designed to comply with Part 15

Installation/Configuration Notes

Compatible Products

Keypads

D1260 Series Keypads
(D1260, D1260W, D1260R, D1260BLK, D1260B)

D720 Series Keypads
(D720, D720W, D720R, D720B)

D1255 Series Keypads
(D1255, D1255W, D1255B, D1255RB)

D1256RB Fire Keypad

D1257RB Remote Fire Alarm Annunciator

D1265 Touch Screen Keypad

D279A Independent Zone Control

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Detectors

D278S Four-wire Addressable Detector Base, 12 VDC

D285/TH Photoelectric Smoke Detector Heads

D298S Addressable Detector Base, 24 VDC

D7050 Series Addressable Photoelectric Smoke and Smoke Heat Detector Heads

F220-B6PM/S Addressable Detector Bases with POPITs

MX775i Addressable PIR Detector

MX794i Long Range Multiplex PIR Detector

MX934i Addressable PIR Detector

MX938i Addressable PIR Detector

ZX776Z PIR Detector

ZX794Z Long Range PIR Detector

ZX835 TriTech Microwave/PIR Detector

ZX935Z PIR Detector

ZX938Z PIR Detector

ZX970 PIR/Microwave Detector

Bosch conventional detectors, including Blue Line, seismic, PIR, TriTech PIR Microwave, photoelectric, heat, and smoke.

Enclosures

D8103 Universal Enclosure

D8108A Attack-resistant Enclosure

D8109 Fire Enclosure

Magnetic Contacts

Bosch magnetic contacts include recessed, terminal connection, miniature, overhead door, and surface mount.

Modules

Conettix ITS-DX4020-G GPRS/GSM Integrated Communicator

Conettix DX4020 Network Interface Module

Conettix DX4010V2 USB/Serial Interface Module

Conettix C900V2 Dialer Capture Module

D113 Battery Lead Supervision Module

D125B Dual Class B Initiating Module

D127 Reversing Relay Module

D129 Class A Initiating Module

D130 Auxiliary Relay Module

D185 Reverse Polarity Signaling Module

D192G Notification Appliance Circuit Module

D928 Phone Line Switcher

D5060 MUX Programmer

D8125 POPEX Point Expander

D8128D OctoPOPIT Eight-point Expander

D8125MUX Point Expander

D8125INV Wireless Interface Module

D8129 Octo-relay Module

D8130 Door Release Module

D9127 Series POPIT Modules

Modules

D9131A Parallel Printer Interface Module

D9210BLC Access Control Interface Module

DS7432 Eight-input Remote Module

DS7457i Series Single-zone Multiplex Input Modules

DS7460i Two-input Module

DS7461i Single-input Multiplex Module

DS7465i Input and Output Module

ICP-SDI-9114 SDI Splitter

Programming

RPS or RPS-LITE Remote Programming Software

Readers

ARD-R10 iCLASS Mullion Reader

ARD-R40 iCLASS Switchplate Reader

ARD-RK40-09 iCLASS PIN Reader

ARD-VSMART iCLASS Reader

D8223 Prox Pro Reader

D8224 Mullion Reader

D8224-SP Switch Plate Reader

D8225 Mini Mullion Reader

D8301W Low-profile Proximity Readers

Commercial Wireless Products

ISW-D8125CW Commercial Wireless Interface

ISW-EN7280 Serial Receiver

ISW-EN4200 Serial Receiver

ISW-EN4204R LED Receiver

ISW-EN4216R LCD Receiver

ISW-EN4016SK Survey Receiver

ISW-EN5040-T High-power Repeater

ISW-EN1210 Universal Transmitter (Single-input)

ISW-EN1210EOL Universal Transmitter with EOL Resistor

ISW-EN1210SK Survey Transmitter

ISW-EN1210W Door-Window Transmitter with Reed Switch

ISW-EN1215EOL Universal Transmitter with Wall Tamper and EOL Resistor

ISW-EN1215WEOL Door-Window Transmitter with Wall Tamper, Reed Switch, and EOL Resistor

ISW-EN1223D Water-resistant Pendant Transmitter (Double-button)

ISW-EN1223S Water-resistant Pendant Transmitter (Single-button)

ISW-EN1223SK Survey Pendant Transmitter

ISW-EN1233D Necklace Pendant Transmitter (Double-button)

ISW-EN1233S Necklace Pendant Transmitter (Single-button)

ISW-EN1235D Beltclip Pendant Transmitter (Double-button)

ISW-EN1235S Beltclip Pendant Transmitter (Single-button)

ISW-EN1235DF Fixed-location Transmitter (Double-button)

ISW-EN1235SF Fixed-location Transmitter (Double-button)

ISW-EN1242 Smoke Detector-Transmitter

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Commercial Wireless Products

ISW-EN1247 Glassbreak Sensor-Transmitter

ISW-EN1249 Billtrap Transmitter

ISW-EN1260 PIR Motion Sensor Transmitter (Commercial and High-end Domestic Applications)

ISW-EN1261HT PIR Motion Sensor Transmitter (High-traffic Areas)

ISW-EN1262 PIR Motion Sensor Transmitter (Residential and Low-traffic Commercial Applications)

ISW-EN1265 PIR Motion Sensor Transmitter (Ceiling-mount Applications)

Parts Included

The D9412GV3 includes the following parts:

Quant.	Component
1	D9412GV3 Board
1	Mounting Skirt
1	Faceplate with D9412GV3 Label
1	Literature pack • Installation Instructions • Owners Manual • Release Notes
1	Literature CD containing all product literature

The available kits come with the parts indicated in the following table:

Components	Kits -A	-B	-C
D9412GV3 Board	1	1	1
D101F Lock and Key Set			1
D122 Dual Battery Harness		1	
D161 Dual Modular Phone Cord		2	
D928 Dual Phone Line Switcher		1	
D1640 Transformer		1	1
D8103 Enclosure			1
D8108A Attack-resistant Enclosure	1		
D8109 Fire Enclosure		1	

Technical Specifications

Communications

SDI Bus A (+):	9 VDC 4572 m (15,000 ft)
SDI Bus B (-):	9 VDC 4572 m (15,000 ft)
Telephone Connection:	• One telephone line • D928 Dual Phone Line Module required for two telephone lines

Environmental Considerations

Relative Humidity:	5% to 93% at +30°C (+86°F), non-condensing
Temperature (Operating):	0°C to +50°C (+32°F to +122°F)

Number of...

Areas:	8
Card Readers (Doors):	8
Credentials (Tokens):	996
Custom Functions:	16
Events:	Up to 1000
Passcode Users:	249, plus 1 service passcode
Parallel Printers:	3
Points:	246 (8 on-board, up to 238 off-board)
Programmable Relay Outputs:	131
RF Points:	238
SKEDs:	64

Power Requirements

Current Draw (Maximum):	300 mA
Output (Alarm):	2 A at 12 VDC
Output (Auxiliary, Continuous Power, and Switched Auxiliary combined):	1.4 A at 12 VDC nominal
Voltage (Operating):	12 VDC nominal
Voltage (AC):	16.5 VAC 40 VA plug-in transformer (D1640)

Trademarks

Trademark names are used throughout this document. In most cases, these designations are claimed as trademarks or registered trademarks in one or more countries by their respective owners. Rather than placing a trademark symbol in every occurrence of a trademark name, Bosch Security Systems, Inc. uses the names only in an editorial fashion and to the benefit of the trademark owner with no intention of infringing the trademark.

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Ordering Information

D9412GV3 Control Panel — D9412GV3
Includes one printed circuit board (PCB) with mounting skirt and faceplate with label, and a literature pack and CD.

D9412GV3-A Attack-resistant Package — D9412GV3-A
Contains one PCB, one transformer, and one attack-resistant enclosure.

D9412GV3-B Fire/Burglar Package — D9412GV3-B
Contains one PCB, one dual battery harness, two telephone cords, one telephone line switcher, one transformer, and one fire enclosure.

D9412GV3-C Standard Burglar Package — D9412GV3-C
Contains one PCB, one lock and key set, one transformer, and one universal enclosure.

Accessories

ICP-SDI-9114 SDI Splitter — ICP-SDI-9114
Provides the ability to set up two independent SDI buses from a single SDI connection on the control panel.

D110 Tamper Switch — D110
Screw-on tamper switch that fits all enclosures. Shipped in packages of two.

ICP-EZTS Dual Tamper Switch — ICP-EZTS
Combination tamper switch with a wire loop for additional tamper outputs.

D8103 Enclosure — D8103
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.).

D8108A Attack Resistant Enclosure — D8108A
Grey steel enclosure measuring 41 cm x 41 cm x 9 cm (16 in. x 16 in. x 3.5 in.). UL Listed. Includes lock and key set. Requires the D2402 Mounting Plate.

D8109 Fire Enclosure — D8109
Red steel enclosure measuring 40.6 cm x 40.6 cm x 8.9 cm (16 in. x 16 in. x 3.5 in). UL Listed. Includes a lock and key set.

D928 Dual Phone Line Switcher — D928
Allows the control panel to operate over and supervise two separate phone lines. Only one D162 phone cord is supplied. Two additional D161 or D162 phone cords are required.

D122 Dual Battery Harness — D122
Harness with circuit breaker. Connects two batteries to a compatible control panel.

D122L Dual Battery Harness with Long Leads — D122L
Color-coded harness with circuit breaker and leads measuring 89 cm (35 in.). Connects 12 V batteries to compatible control panels.

Ordering Information

D126 Standby Battery (12 V, 7 Ah) — D126
Sealed lead-acid standby and auxiliary rechargeable power supply.

D1218 Battery (12 V, 18 Ah) — D1218
A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors

D1224 Battery (12 V, 26-28 Ah) — D1224
A 12 V sealed lead-acid battery for standby and auxiliary power with two bolt-fastened terminals. Includes hardware for attaching battery leads or spade connectors.

D137 Mounting Bracket — D137
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.

D138 Mounting Bracket, Right Angle — D138
Used to mount accessory modules in D8103, D8108A, and D8109 enclosures.

D1640 Transformer — D1640
System transformer rated at 16.5 VAC, 40 VA.

D8004 Transformer Enclosure — D8004
For applications such as fire alarm that might require a transformer enclosure.

D9002-5 Mounting Skirt — D9002-5
Mounts inside D8103, D8108A, and D8109 enclosures. Can accept up to six standard 7.62 cm x 12.7 cm (3 in. x 5 in.) cards.

D101 Lock and Key Set — D101
Standard lock set with one key supplied. Uses the D102 (#1358) replacement key.

Software Options

RPS Kit (USB) — D5500C-USB
Account management and control panel-programming software with USB connection.

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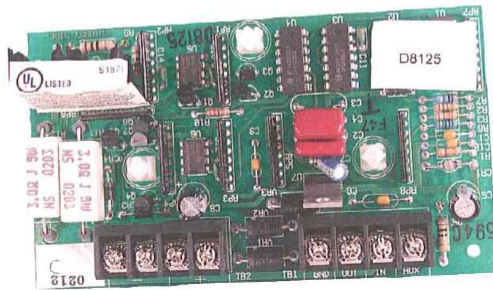and public address system; telephone system; and fire detection and alarm system

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D8125 Addressable Expansion Module

- ▸ Provides point identification of initiating devices
- ▸ Supervises wiring to devices for circuit integrity
- ▸ Expands the number of points in the system
- ▸ Compact size
- ▸ Terminal connections for reliability
- ▸ Multiplex technology
- ▸ Low installation costs

The D8125 Addressable Expansion Module works with the D9127U or D9127T POPIT Modules to provide multiplex technology that combines zone or point supervision with individual device addressing on one pair of wires. Use the D8125 to provide expansion beyond the standard number of control panel zones, up to a total of 240 points. Each D8125 module can fully supervise 120 D9127U or D9127T POPIT Modules.

System Overview

Each D8125 installs in the control panel enclosure or in an adjacent approved enclosure. Future system expansion is very economical as D9127U or D9127T POPITs can be spliced in anywhere along the two-wire data expansion loop from the D8125 module.

The D9127 is a compact, addressable device that is suitable for applications where specifications call for point identification from each initiating device or series of devices. The units are small, and easily installed in standard outlet boxes, above false ceilings, closets, or other accessible locations.

The D8125 includes a 33 kΩ end-of-line (EOL) resistor. Install the resistor at the farthest point on the loop for proper supervision.

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Certifications and Approvals

Region	Certification	
USA	UL	AMCX: Central Station Alarm Units (UL1610, UL1635), AMCX7: Central Station Alarm Units Certified for Canada (cULus), AOTX: Local Alarm Units (UL464, UL609), AOTX7: Local Alarm Units Certified for Canada (cULus), APAW: Police Station Alarm Units (UL365, UL464), APAW7: Police Station Alarm Units Certified for Canada (cULus), APOU: Proprietary Alarm Units (UL1076), APOU7: Proprietary Alarm Units Certified for Canada (cULus), NBSX: Household Burglar Alarm System Units (UL1023), NBSX7: Household Burglar Alarm System Units Certified for Canada (cULus), UOJZ: Control Units, System (UL864, 9th edition), UTOU: Control Units and Accessories - Household System Type (UL985), UTOU7: Control Units and Accessories - Household System Type Certified for Canada (cULus)
	FM	
	CSFM	7167-1615: 0100 CONTROL UNIT (HOUSEHOLD)
		7165-1615: 0113 FIRE ALARM CONTROL UNIT (COMMERCIAL)
		7165-1615: 119 FIRE ALARM CONTROL UNIT (COMMERCIAL)
	FDNY-CoA	6059
	NYC-MEA	12-92-E, Vol. II
		12-92-E, Vol. 12
		12-92-E, Vol. 15
Australia	C-Tick	

Parts Included

Quantity	Component
1	Expansion board
1	Hardware pack
1	Literature pack

Technical Specifications

Properties

Dimensions:	13 cm x 8 cm x 2 cm (5 in. x 3 in. x 0.75 in.)

Power Requirements

Current Draw:	50 mA for each D8125 module
Voltage (Operating):	12 VDC

Ordering Information

D8125 Addressable Expansion Module Provides expansion up to 240 points.	D8125

Accessories	
D9127U POPIT Module No tamper switch.	D9127U
D9127T POPIT Module Includes a magnetic tamper switch.	D9127T

Installation/Configuration Notes

Compatibility Information

Control Panels	All G Series control panels, D9412, D7412, D7212, D7212B1, D9112, D9112B1, D8112G1, D8112G2, and D9124

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D1265 Touch Screen Keypad

▸ **Bright 480 by 272 TFT color graphic touch screen display provides excellent visibility**

▸ **Simple menu operation allows ease of use for novice users and familiarity for experts**

▸ **System instructions through Integrated on-screen Help**

▸ **Easy installation with self-locking base and chassis design including integrated bubble level**

▸ **Compatible with GV2 and GV3 Series Control Panels**

The D1265 Touch Screen Keypad is an SDI bus compatible device that works with GV2/GV3 Series Control Panels. Each keypad has an illuminated touch screen to display system messages and graphical buttons for data or command entry, and a sounder that emits eight warning tones.

Functions

Touch Screen Display

The D1265 keypad uses up to four rows of 20 characters each to display system messages and/or graphical buttons used to select a menu and associated functions. In addition to system messages and graphical buttons, the keypad displays, as needed, ten numeric butttons (0 to 9) and two function buttons (CMD and ENTER). Use the **COMMAND** button in combination with numeric buttons to perform a function. Use the **ENTER** button to enter your passcode.

When several events occur, the keypad shows each event in order of priority.

Audible Tones

The sounder emits eight distinct warning tones. You can adjust the volume. You can also use a passcode to silence the tone.

Certifications and Approvals

The D1265 keypad is designed to comply with the requirements of:

USA	FCC	Part 15
EC Directives	RoHS	Directive 2002/95/EC Restriction of the use of certain Hazardous Substances
	WEEE	Directive 2002/96/EC Waste Electrical and Electronic Equipment

Installation/Configuration Notes

Compatibility Information

Control Panels	D9412GV3, D7412GV3, D7212GV3, D9412GV2, D7412GV2, D7212GV2,

Power Supplies

A compatible control panel supplies the power and data requirements to a D1265 keypad through a simple four-wire connection. To determine if an additional power supply is needed, use the operation and installation manual for the specific control panel and refer to the current rating chart for standby battery calculations.

Wiring Considerations

Use 1.2 mm (18 AWG) or 0.8 mm (22 AWG) wire. Each D1265 keypad includes a four position terminal strip located on the backplate for easy removal.

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Parts Included

Quant.	Component
1	Keypad
1	Literature
	• Quick Installation Guide
	• Literature CD

Technical Specifications

Electrical Requirements

Voltage:	12 VDC nominal
Wire Length	1000 ft of 18 awg
Standby Current:	Idle 135 mA Maximum 300 mA, with the sounder and display backlight at maximum

Environmental Requirements

Environment:	Indoor, dry
Relative Humidity:	90% at +50°C (+122°F)
Temperature (operating):	-10°C to +60°C (+14°F to +140°F)

Mechanical Properties

Color (enclosure):	White
Dimensions:	119 mm x 122 mm x 29 mm (4.7 in. x .4.8 in. x 1.2 in.)
Weight (Keypad):	0.24 kg (0.55 lb)

Number of

Keypads per control panel

GV3 Series, v8.11 or higher:	Supervised: 16 Unsupervised: 32
GV3 Series, lower than v8.10 and GV2 Series:	Supervised: 8 Unsupervised: 32

Ordering Information

D1265 Touch Screen Keypad Touch screen keypad for use with GV3 and GV2 control panels	**D1265**

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and public address system; telephone system; and fire detection and alarm system

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Invented for life

D1260 Series LCD Keypads
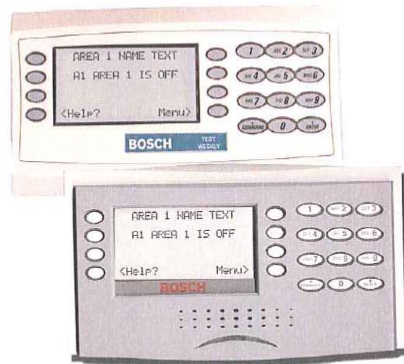
▶ Integrated user Help windows to simplify operation

▶ Illuminated four-line display

Each D1260 Series Keypad model is an SDI bus compatible device that works with G Series Control Panels. Each keypad model has an illuminated keypad, a bright four-line by 20-character English language liquid crystal display (LCD), and a sounder that emits eight warning tones.

Note   The D1260 Series Keypads are available exclusively to Bosch Certified Security Dealers (BCSD).

Functions

LCD Display

Every D1260 Series Keypad model uses words, numbers, and symbols to show the status of the security system. When several events occur, each model shows each event in order of priority.

Keys

Each D1260 Series Keypad model has 10 numeric keys, two function keys, and eight soft keys. Use the [COMMAND] key in combination with numeric keys to perform a function. Use the [ENTER] key to enter your passcode. Use the eight soft keys to select a menu and associated functions.

Audible Tones

The sounder emits eight distinct warning tones. You can adjust the volume. You can also use a passcode to silence the tone.

The tones include:

- Burglary Signal: Steady high-pitched bell tone during alarm.
- Fire Signal: Pulsed high-pitched bell tone during fire alarm.
- Entrance Warning: Intermittent beep tones during entry delay periods.
- Exit Warning: Intermittent beep tones during exit delay periods.
- Invalid Key Buzz: Buzz tone when an invalid key is pressed.
- Keypad Encoding Tone: Muted beep tone as each key is pressed.
- Trouble Buzzer: Two-tone warble during a trouble event.
- Watch Tone: Intermittent beep tone when a watch point is faulted.

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Certifications and Approvals

Region	Certification	
USA	UL	D1260: AMCX: Central Station Alarm Units (UL1610, UL1635), AMCX7: Central Station Alarm Units Certified for Canada (cULus), AMTB: Control Panels, SIA False Alarm Reduction, AOTX: Local Alarm Units (UL464, UL609), AOTX7: Local Alarm Units Certified for Canada (cULus), APAW: Police Station Alarm Units (UL365, UL464), APAW7: Police Station Alarm Units Certified for Canada (cULus), APOU: Proprietary Alarm Units (UL1076), APOU7: Proprietary Alarm Units Certified for Canada (cULus), NBSX: Household Burglar Alarm System Units (UL1023), NBSX7: Household Burglar Alarm System Units Certified for Canada (cULus), UTOU: Control Units and Accessories - Household System Type (UL985), UTOU7: Control Units and Accessories - Household System Type Certified for Canada (cULus)
		D1260B: AMCX7: Central Station Alarm Units Certified for Canada (cUL), AOTX: Local Alarm Units (UL464, UL609), AOTX7: Local Alarm Units Certified for Canada (cULus), APAW: Police Station Alarm Units (UL365, UL464), APAW7: Police Station Alarm Units Certified for Canada (cULus), APOU: Proprietary Alarm Units (UL1076), APOU7: Proprietary Alarm Units Certified for Canada (cULus), NBSX7: Household Burglar Alarm System Units Certified for Canada (cUL), UTOU7: Control Units and Accessories - Household System Type Certified for Canada (cUL)
		D1260BLK, D1260R, and D1260W: AOTX: Local Alarm Units (UL464, UL609), APAW: Police Station Alarm Units (UL365, UL464), APOU: Proprietary Alarm Units (UL1076)
	CSFM	D1260, D1260R, D1260W: 7167-1615:0100 CONTROL UNIT (HOUSEHOLD)
		D1260: 7165-1615:0113 FIRE ALARM CONTROL UNIT (COMMERCIAL)
		D1260: 7165-1615:0119 FIRE ALARM CONTROL UNIT (COMMERCIAL)
	NYC-MEA	D1260: 12-92-E, Vol. VII
		D1260: 12-92-E, Vol. 15
Australia	C-tick	

Installation/Configuration Notes

Compatibility Information

Control Panels	All G Series control panels, D9412, D7412, D7212, and D9112 with firmware versions 6.40 or higher.

Mounting Considerations

- Do not mount the any of the D1260 Series Keypad models in a location exposed to direct sunlight. Direct sunlight can interfere with screen visibility and damage internal components.
- Do not mount any of the D1260 Series Keypad models in damp locations.

Power Supplies

A compatible control panel supplies the power and data requirements to a D1260 Series Keypad model through a simple four-wire connection. To determine if an additional power supply is needed, use the operation and installation manual for the specific control panel and refer to the current rating chart for standby battery calculations.

Wiring Considerations

Use 1.2 mm (18 AWG) or 0.8 mm (22 AWG) wire. Resistance cannot exceed 14 Ω. Each D1260 Series Keypad model includes a wiring assembly of four color-coded flying leads and one female four-pin connector.

Technical Specifications

Power Requirements

Voltage:	Nominal 12 VDC
Standby Current:	Idle 200 mA Maximum 250 mA, with the sounder and display backlight at maximum

Keypad

Dimensions for D1260, D1260W, D1260R, and D1260BLK:	10.9 cm x 20 cm x 2.6 cm (4.3 in. x 7.9 in. x 1 in.)
Dimensions for D1260B:	12.6 cm x 20.9 cm x 3.2 cm (5 in. x 8.2 in. x 1.3 in.)
Weight for All Models:	439 g (15.5 oz)
Indicators:	Illuminated keys Warning and indicating tones

Material

D1260, D1260W, D1260R, and D1260BLK:	GE CYCOLOY C1110. UL94-HB Fire Rated
D1260B:	CHI MEI POLYLAC PA-757 with UV Stabilizer. UL94-HB Fire Rated

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Connections

Connections:	4-wire flying lead for data and power
Resistance:	14 Ω maximum

Display Screen

Type:	Backlit LCD
Size:	8.6 cm x 3.6 cm (3.4 in. x 1.4 in.) 4 lines x 20 characters

Environmental Considerations

Humidity:	95% ±2% at +49°C (+120°F)
Operating Temperature:	0°C to +49°C (+32°F to +120°F)
Use:	Intended for indoor use

Number of...

D1260 Series Keypad Models per Control Panel:	8 supervised 32 unsupervised

Trademarks

Trademark names are used throughout this document. In most cases, these designations are claimed as trademarks or registered trademarks in one or more countries by their respective owners. Rather than placing a trademark symbol in every occurrence of a trademark name, Bosch Security Systems, Inc. uses the names only in an editorial fashion and to the benefit of the trademark owner with no intention of infringing the trademark.

CYCOLOY is a registered trademark of General Electric Com-pany.

POLYLAC is a registered trademark of CHI MEI Industrial Cor-poration, LTD.

Plexiglas is a registered trademark of Arkema.

Note   The D1260 Series Keypads are available exclusively to Bosch Certified Security Dealers (BCSD).

Ordering Information

D1260 LCD Keypad Off-white classic case.	D1260
D1260B LCD Keypad White and gray modern case.	D1260B
D1260BLK LCD Keypad Black classic case.	D1260BLK
D1260R LCD Keypad Red classic case.	D1260R
D1260W LCD Keypad White classic case.	D1260W

Ordering Information

Accessories

D54B-1260 Brass Flush-mount Kit Back box and polished brass faceplate used with D1260 Series Keypad models.	D54B-1260
D54C-1260 Stainless Steel Flush-mount Kit Back box and stainless steel faceplate used with D1260 Series Keypad models.	D54C-1260
D55 Keypad Desk Stand Portable desk stand in smoke colored Plexiglas.	D55
D56 Surface Mount Conduit Box White surface mount box.	D56
D56R Red Surface Mount Conduit Box Red surface mount box.	D56R

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BOSCH
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DS938Z and ZX938Z Series Panoramic PIR Detectors

▸ **Motion Analyzer II processing**

▸ **Motion Monitor**

▸ **Self-test supervision systems**

▸ **Changeable mirrors**

▸ **360° x 18 m (60 ft) diameter pattern**

▸ **2.5 m to 6 m (8 ft to 18 ft) mounting height**

These ceiling mount, 18 m (60 ft) panoramic PIR Detectors use Motion Analyzer II processing to reduce false alarms. The series consists of the:

- DS938Z Panoramic Detector
- ZX938Z Panoramic Detector with POPIT

Several unique self-test features, including Motion Monitor, provide coverage integrity. Field replaceable mirrored optics allow them to be mounted on ceilings from 2.5 m to 6 m (8 ft to 18 ft) in height.

Functions

Motion Analyzer II Processing

Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. It will not alarm on extreme levels of thermal and illumination disturbances caused by heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. Provides three sensitivity settings.

PIR Supervision

PIR supervision provides trouble output in the event that PIR circuitry fails.

Motion Monitor

Switch-selectable four or thirty day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area and that it has not been blocked.

Test Features

Three externally visible high output alarm LEDs visible from any angle, flash to indicate trouble condition. Internal noise voltage test pins provide precise pattern location and background disturbance evaluation using a standard analog meter.

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Certifications and Approvals

| Region	Certification	
Europe	CE	DS938Z, DS938Z-CHI, and DS938Z-FRA: 89/336/EEC, EN55022: 1998 +A1: 2000 +A2: 2003, EN50130-4: 1996 +A1: 1998 +A2: 2003, EN61000-4-2: 1995 +A1: 1998 +A2: 2001, EN61000-4-3: 2002 +A1: 2003, EN61000-4-4: 1995 +A1: 2000 +A2: 2001, EN61000-4-5: 1995 +A1: 2001, EN61000-4-6: 1996 +A1: 2001 +A2: 2001, EN61000-4-11:1994 +A1: 2001, EN60950-1: 2001 +A11: 2004
Poland	TECHOM	DS938Z: 98/07 Klasy "C"
USA	UL	DS938Z: ANSR: Intrusion Detection Units (UL639)
		ZX938Z: ANSR: Intrusion Detection Units (UL639)
China	CCC	DS938Z: 2002031901000002
		DS938Z-CHI: 2004031901000036
Sweden	INTYG	DS938Z only: 04-683

These detectors have also been designed to meet the requirements of:
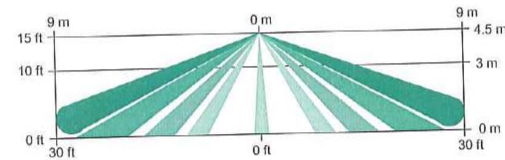
Europe		DS938Z complies with EN50131-1, Grade 2
France	AFNOR	NF, A2P

Installation/Configuration Notes
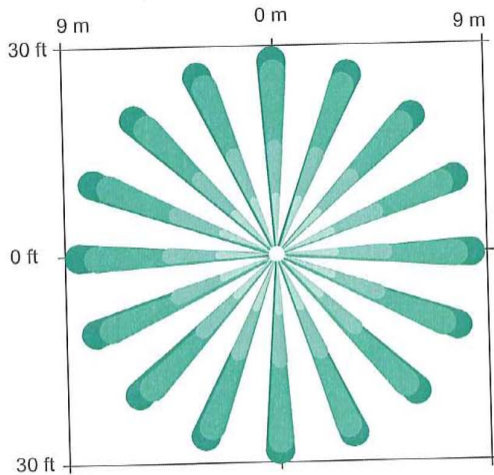
Top View
360° x 18 m (60 ft) diameter
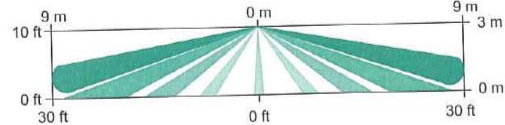
AR8-13 Side View
360° x 18 m (60 ft) diameter

AR13-18 Side View
360° x 18 m (60 ft) diameter

Technical Specifications

Enclosure Design

Material:	High impact ABS plastic enclosure
Dimensions:	8.4 cm x 13.3 cm (3.3 in. x 5.25 in.)

Environmental Considerations

Operating Temperature:	-29°C to +49°C (-20°F to +120°F) *For UL Listed Applications,* *0°C to +49°C (+32°F to +120°F)*
Radio Frequency Interference (RFI) Immunity:	No alarm or setup on critical frequencies in the range from 26 MHz to 950 MHz at 50 V/m.
DS938Z:	Complies with Environmental Class II (EN50130-5)

Mounting

Height (recommended):	2.5 m to 6 m (8 ft to 18 ft)
Location:	Mounts directly to ceiling or to standard octagonal electrical box.
Internal Pointability:	Coverage is adjustable ±10° horizontally, +2° to -18° vertically.

Outputs (DS models)

Alarm:	Form C reed relay at 3.0 W, 125 mA at 28 VDC for resistive loads
Tamper:	Normally-closed. Contacts rated at 28 VDC, 125 mA maximum.

Outputs (ZX model)

Alarm:	Signal through POPEX data bus.
Tamper:	Signal through POPEX data bus. Signaled as missing.
Trouble:	Signal through POPEX data bus.

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Power Requirements (DS models)

Current:	18 mA at 12 VDC
Voltage:	6 VDC to 15 VDC

Power Requirements (ZX model)

Current:	< 0.5 mA nominal, 2 mA in alarm with LED enabled
Voltage:	Power comes from two-wire POPEX bus.

Note: Do not leave Walk Test LEDs enabled.

Ordering Information

DS938Z Panoramic Detector Provides Motion Analyzer II processing, movable mirrors, and 360° x 18 m (60 ft) diameter coverage.	**DS938Z**
DS938Z-FRA Panoramic Detector For use in France. Provides Motion Analyzer II processing, movable mirrors, and 360° x 18 m (60 ft) diameter coverage.	**DS938Z-FRA**
ZX938Z Panoramic Detector Provides an internal POPIT, Motion Analyzer II processing, movable mirrors, and 360° x 18 m (60 ft) diameter coverage.	**ZX938Z**

Accessories

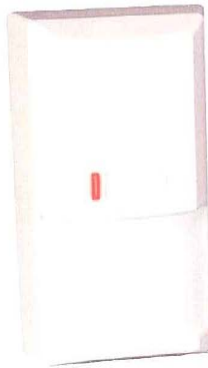|	
AR13-18-3 Optical Module Designed for 4 m (13 ft) to 6 m (18 ft) mounting height. Shipped in packages of three.	**AR13-18-3**
TC6000 Test Cord Test cord for connecting a compatible detector's test pins to a voltmeter. It is 4.6 m (15 ft) long.	**TC6000**

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BOSCH
Invented for life

DS950 and DS970 Series High-performance Detectors

- ▸ **Five layers of detection including look-down zone**
- ▸ **Supervised microwave and PIR**
- ▸ **Anti-masking feature**
- ▸ **Selectable PIR sensitivity**
- ▸ **Five mounting options**
- ▸ **Draft and insect immunity**
- ▸ **Motion Monitor supervision**
- ▸ **Alarm memory**
- ▸ **Microwave Inhibit**

The DS950 and DS970 Detectors provide excellent catch performance and freedom from false alarms with five layers of detection (including look-down zone), patented passive infrared, and microwave processing.

Functions

Signal Processing
Uses passive infrared and microwave technologies to provide an alarm condition upon simultaneous activation of both fields of protection. Adjustable PIR and microwave sensitivity.

- **PIR Signal Processing:** Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. It will not alarm on extreme levels of thermal and illumination disturbances (heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights). Motion Analyzer II provides two sensitivity settings.
- **Microwave Signal Processing:** Pattern recognition circuitry identifies and ignores repetitive false alarm sources. Adaptive processing adjusts to background disturbances.

Microwave Anti-Masking
Provides supervision trouble signal if microwave reflective material is placed within 30.5 cm (1 ft) of detector.

Test Features
Three-color alarm LED with separate colors for alarm, PIR, and microwave activation. Internal noise voltage test pins provide pattern location and background disturbance evaluation using a standard analog meter. Trouble memory feature recalls trouble conditions.

Supervised Microwave and PIR
Patented fully supervised microwave and PIR circuitry provides single technology coverage in the event the microwave subsystem fails.

Draft and Insect Immunity
The sealed optic chamber provides immunity to drafts and insects.

Alarm memory
Provides indication of stored alarms for use in multiple unit applications by latching the alarm LED. Controlled by a switched voltage from the control panel.

Microwave Inhibit
When using the memory input, the microwave portion of the detector can be turned off during disarm period.

Motion Monitor
Switch-selectable one or 30 day Motion Monitor supervision timers provide the detector with the ability to verify that there is a clear view of the protection area. The memory circuit can also control this feature.

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Certifications and Approvals

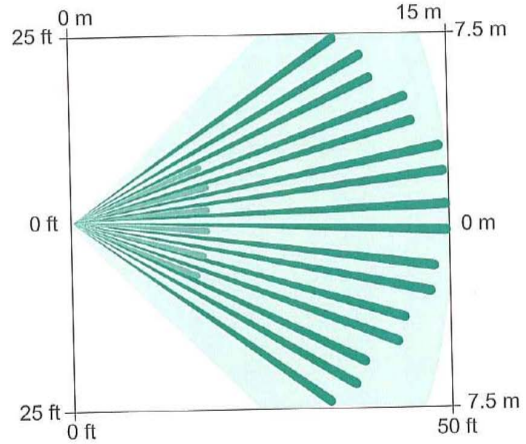| Region	Certification	
Europe	CE	89/336/EEC and 1999/5/EC, EN55022: 1998 +A1: 2000 +A2: 2003, EN50130-4: 1996 +A1: 1998 +A2: 2003, EN61000-4-2: 1995 +A1: 1998 +A2: 2001, EN61000-4-3: 2002 +A1: 2003, EN61000-4-4: 1995 +A1: 2000 +A2: 2001, EN61000-4-5: 1995 +A1: 2001, EN61000-4-6: 1996 +A1: 2001 +A2: 2001, EN61000-4-11:1994 +A1: 2001, EN60950-1: 2001 +A11: 2004, EN 300 440-2 V1.1.1 (2001-09), EN 301 489 Parts -1 and -3 V1.2.1 (2000-08)
		DS950 and DS970: 1999/5/EC, ETS 300440: 1996, ETS 300683: 1997, EN60950: 1992
		DS950B-ITA and DS970B-ITA: 89/336/ EEC, EN50130-4: 1995 +A1: 1998 +A2: 2003
Belgium	INCERT	DS950 and DS970: B-509-0014/c
USA	UL	DS950 and DS970: ANSR: Intrusion Detection Units (UL639)
		ZX970: ANSR: Intrusion Detection Units (UL639)
	FCC	DS950 and DS970: ESVDS730 ESVDS730
Italy	IMQ	DS950B-ITA: U0628
		DS970B-ITA: U0629
Canada	ULC	DS950 and DS970: ANSRC: Intrusion Detection Units (S306-M89)
China	CCC	DS950-CHI and DS970-CHI: 2009031901000563
Brazil	ANATEL	DS950 and DS970: 0667-03-1855
Singapore	iDA	DS950: LPREQ-S0151-2004
		DS970: LPREQ-S0152-2004

These detectors are designed to also comply with the requirements of:

France	AFNOR	DS950-B, DS950B-FRA, DS970-B, DS970B-FRA: NF, A2P
Europe		DS950-A and DS970 comply with EN50131-1 Grade 3

Top View
Standard Broad Coverage (DS950): 15 m x 15 m (50 ft x 50 ft)

Side View
Standard Broad Coverage (DS950): 15 m x 15 m (50 ft x 50 ft)
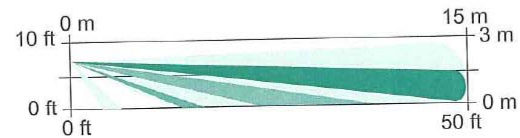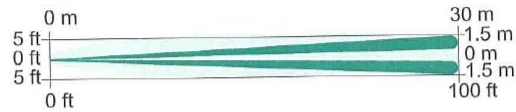
Installation/Configuration Notes

Mounting Considerations

Recommended mounting height is 2.3 m (7.5 ft). Mounts to a standard single gang electrical box.

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Top View
Standard Broad Coverage (DS970): 21 m x 21 m
(70 ft x 70 ft)

0 m — 21 m
35 ft — 10.5 m
0 ft — 0 m
35 ft — 10.5 m
0 ft — 70 ft

Side View
Standard Broad Coverage (DS970): 21 m x 21 m
(70 ft x 70 ft)

0 m — 21 m
33 ft — 10 m
0 ft — 0 m
0 ft — 70 ft

Top View
Optional Long Range Coverage (DS970): 30 m x 3 m
(100 ft x 10 ft)

0 m — 30 m
5 ft — 1.5 m
0 ft — 0 m
5 ft — 1.5 m
0 ft — 100 ft

Side View
Optional Long Range Coverage (DS970): 30 m x 3 m
(100 ft x 10 ft)

0 m — 30 m
5 ft — 1.5 m
0 ft — 0 m
0 ft — 100 ft

Technical Specifications

Enclosure Design

Dimensions:	12.7 cm x 7.1 cm x 5.6 cm (5 in. X 2.8 in. X 2.2 in.)
Material:	High impact ABS plastic enclosure

Environmental Considerations

Operating Temperature:	-40°C to +49°C (-40°F to +120°F) *For UL Certificated installations, 0°C to +49°C (+32°F to +120°F).*
Radio Frequency Interference (RFI) Immunity:	No alarm or setup on critical frequencies in the range from 26 MHz to 950 MHz at 50 V/m.
DS950-A and DS970:	Comply with Environmental Class II (EN50130-5)

Mounting

Location:	Surface or corner mount
Internal Pointability:	+2° to -10° vertical, ±10° horizontal (Unit is shipped with look-down lens masked).

Outputs

Alarm:	Form C reed relay rated at 3.0 W, 125 mA at 28 VDC for resistive loads.
Tamper:	Normally closed (cover in place). Contacts rated at 28 VDC, 125 mA maximum.
Trouble:	Solid state output, shorts to ground (-) when the detector is in a supervision trouble condition. Maximum current load is 25 mA, Vsat at 10 mA = 0.5 VDC.

Power Requirements

Current Draw:	22 mA nominal at 12 VDC
Voltage (Input):	9 VDC to 15 VDC

Trademarks

TriTech® is a registered trademark of Bosch Security Systems in the United States.

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Ordering Information

DS950 Detector (10.525 GHz) — DS950
Operates at 10.525 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950-BEL Detector (10.525 GHz) — DS950-BEL
Operates at 10.525 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in Belgium. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950-CAN Detector (10.525 GHz) — DS950-CAN
Operates at 10.525 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in Canada. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950-NEL Detector (10.525 GHz) — DS950-NEL
Operates at 10.525 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in the Netherlands. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950CH-SWI Detector (10.475 GHz) — DS950CH-SWI
Operates at 10.475 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in Switzerland. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950-A Detector (10.687 GHz) — DS950-A
Operates at 10.687 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950-B Detector (9.9 GHz) — DS950-B
Operates at 9.9 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS950B-FRA Detector (9.9 GHz) — DS950B-FRA
Operates at 9.9 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in France. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

Ordering Information

DS950B-ITA Detector (9.9 GHz) — DS950B-ITA
Operates at 9.9 GHz. Provides 15 m x 15 m (50 ft x 50 ft) coverage. For use in Italy. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970 Detector (10.525 GHz) — DS970
Operates at 10.525 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970-BEL Detector (10.525 GHz) — DS970-BEL
Operates at 10.525 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in Belgium. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970-CAN Detector (10.525 GHz) — DS970-CAN
Operates at 10.525 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in Canada. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970-NEL Detector (10.525 GHz) — DS970-NEL
Operates at 10.525 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in the Netherlands. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970CH-SWI Detector (10.525 GHz) — DS970CH-SWI
Operates at 10.525 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in Switzerland. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970-A Detector (10.687 GHz) — DS970-A
Operates at 10.687 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970-B Detector (9.9 GHz) — DS970-B
Operates at 9.9 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

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Ordering Information

DS970B-FRA Detector (9.9 GHz)
Operates at 9.9 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in France. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970B-FRA

DS970B-ITA Detector (9.9 GHz)
Operates at 9.9 GHz. Provides 21 m x 21 m (70 ft x 70 ft) coverage. For use in Italy. Provides five layers of detection, supervised microwave and PIR, anti-masking feature, selectable sensitivity, five mounting options, and draft and insect immunity.

DS970B-ITA

ZX970 Detector (10.525 GHz)
Operates at 10.525 GHz and provides 21 m x 21 m (70 ft. x 70 ft.) coverage. Includes a POPIT for addressable alarm and trouble signaling. The POPIT makes it easier to install (fewer wires needed) and provides a low current consumption.

ZX970

Accessories

B328 Gimbal-mount Bracket
Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.

B328

Swiveling B335-3 low-profile mount
Swiveling, low-profile, plastic mount for wall mounting. The vertical swivel range is +10° to -20°, while the horizontal swivel range is ±25°. Available in triple packs.

B335-3

TC6000 Test Cord
Test cord for connecting a compatible detector's test pins to a voltmeter. It is 4.6 m (15 ft) long.

TC6000

www.boschsecurity.com

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

EXHIBIT C

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

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Raptor V

The Teradon Raptor V is the most advanced communication systems in its class. The Raptor V system features are delivered on a single server making it easy to install, use, and manage. More importantly, it provides your school with the most complete and cost effective communication system available today.

Computer - Teradon Raptor V system is built on industry standard computers with Microsoft Windows, thus offering a low total cost of ownership.

Pricing - In order to address the unique needs of schools, Teradon Raptor V systems are modular in design. This flexibility allows schools to purchase just what is needed, thereby making it easy to meet your distinct budget requirements.

Growing with your school - Raptor V system will grow as your needs grows. Gone are the days of replacing your communication system when the maximum number of extensions has been reached. With the Teradon Raptor V, you can continue to add communication system resources as your school demands increase, including powerful multi-site, remote site, and distributed office capabilities.

Protecting your Investment - Proprietary hardware-based communication systems (which most systems still are today, including many VoIP phone systems) depreciate over time. The key advantage of Teradon's Raptor V system is that the features are predominately software-based. Not only is your investment protected, your Teradon system will actually appreciate over time with new and improved functionality, provided in software upgrades.

Teradon VoIP Phones - Bringing stylish form and functionality to the desktop, Teradon VoIP phones make sophisticated features simple and intuitive to use. Users have single button access to voicemail, activity/presence selection, and voicemail greeting selections, call recording, call conferencing, and call transferring. Phone displays are capable of displaying time, Caller ID name and number, real-time call center workgroup statistics and do-not-disturb and call forwarding status.

Audio Conference Bridge - Teradon's VoIP Audio Conference Bridge delivers a next-generation communication conference solution with an intuitive, easy-to-use interface that pays for itself through the elimination of expensive communication services. Paging, intercom, and bells come as an integral part of the system.

Bells and Announcements -With support for an unlimited amount of speakers, Teradon's intuitive interface makes it easy to schedule bells, make announcements, and communicate to speakers.

Auto Attendant - Teradon's Auto Attendant answers and routes calls the way you want - 24 Hours a day, 365 days a year - without the intervention of a live operator. Auto Attendant provides a powerful, yet easy to use voice prompted menus for call handling and information collection.

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AR1000 SERIES | Raptor V

Front View

DESCRIPTION:

Utilizing the newest technology, the Teradon Raptor V is the most advanced communication systems in its class. The Raptor V system features are delivered on a single rack mount server making it easy to install, use, and manage. More importantly, it provides the school with the most complete and cost effective communication system available today. Teradon Raptor V system is built on industry standard computers with Microsoft Windows, thus offering a low total cost of ownership.

Teradon Raptor V systems are modular in design to address the distinctive needs of each school. This flexibility allows schools to purchase just what is needed, thereby making it easy to meet their distinct budget requirements. With the Teradon Raptor V, you can continue to add communication system resources as the school's demands increase, including powerful multi-site, remote site, and distributed office capabilities.

The Raptor V supports multiple communication paths including IP and/or analog telephones, intercom speakers with call-in buttons and paging speakers. The Raptor's intuitive interface makes it easy to set-up telephones, voice mail, bell schedules, make announcements, and communicate to speakers for any size campus.

FEATURES:
- Modular Design for expansion
- Remote modules eliminating home-run cabling
- Accommodates Executive IP and/or Analog phones
- Built-in Master Clock software
- System equipped with internet radio & CD player
- Software has easy-to-use graphical user interface
- Uses standard 25 Volt line speakers
- Hands free operation from classroom
- MS Windows XP and Vista O/S
- All equipment is rack mounted

- 999 paging zones
- Wave file tones
- Up to 999 pre-recorded emergency announcements
- 3 simultaneous active bell schedules per day
- repeating schedule programming
- Standard keyboard shortcuts for easier programming
- Unlimited user definable holiday schedules
- Capable of interfacing with an existing telephone system
- Accommodates many wiring configurations
- Optional single pair of fiber backbone
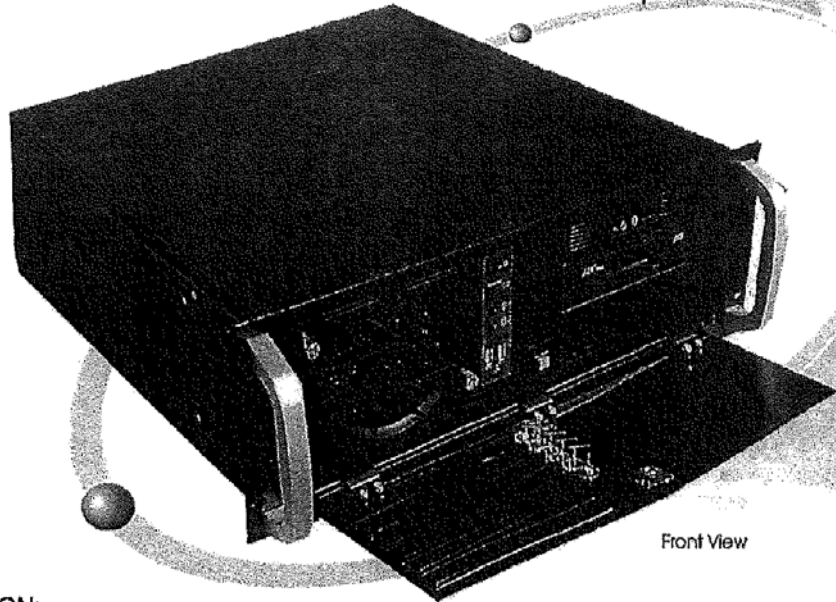- 1 year warranty

[All specifications subject to change without notice.]

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T9005R | Raptor V Computer

Front View

DESCRIPTION:

The T9005R Raptor V Computer incorporates an industrial standard rack mount chassis with convenient front locking door. The metal chassis meets CE & FCC requirements. The ATX power supply provides 390watts of power and is UL certified.

The Intel® Motherboard delivers new levels of performance and enhanced multimedia enjoyment in the ATX form factor supporting Intel® Core™2 processors. The board also offers exciting premium features such as Intel® HD Video, Intel® High Definition Audio, Integrated 10/100/1000 Network connection, ample USB ports and IEEE 1394a for consumers to enjoy a great digital entertainment experience. With the Intel® Core™2 Duo processor, you'll experience revolutionary performance, unbelievable system responsiveness, and energy-efficiency second to none. These processors are up to 40 percent faster with improved energy-efficiency.

The T9005R has built in CD-ROM and stereo speakers. A second LAN card is for connectivity with the Raptor V system.

The T9005R comes configured with Windows Vista Business. *NO WIN 7*

FEATURES:

- Industrial Standard 19" 4U rack mount chassis
- Front locking door
- Thermal control board
- Meets CE & FCC requirements
- Dimensions: 19"D x 19" W x 7" H

- 1G DDR memory
- Multimedia Speaker system
- CD ROM
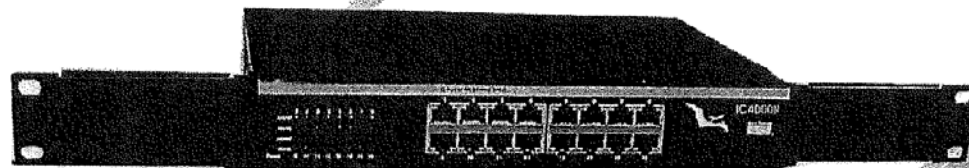- Color Black
- Windows Vista Business Software

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IC4000R | Network Switch

Front View

DESCRIPTION:

With its advanced switching technology, the IC4000R 16-Port 10/100 Ethernet Switch will boost your network performance with much more than just full duplex data transfer and dedicated bandwidth. It features non-blocking, wire-speed switching that forwards packets as fast as your network can deliver them. Also, included are Address Learning and Aging to prevent data transfer errors and Data Flow Control to help prevent packet collisions.

The IC4000R compact size fits into any environment, or install it using the included rack mount brackets.

No matter how intensive your network demands, the Teradon IC4000R Compact 16-Port 10/100 Ethernet Switch's advanced chipset supports your needs with an affordable and efficient networking solution you can count on.
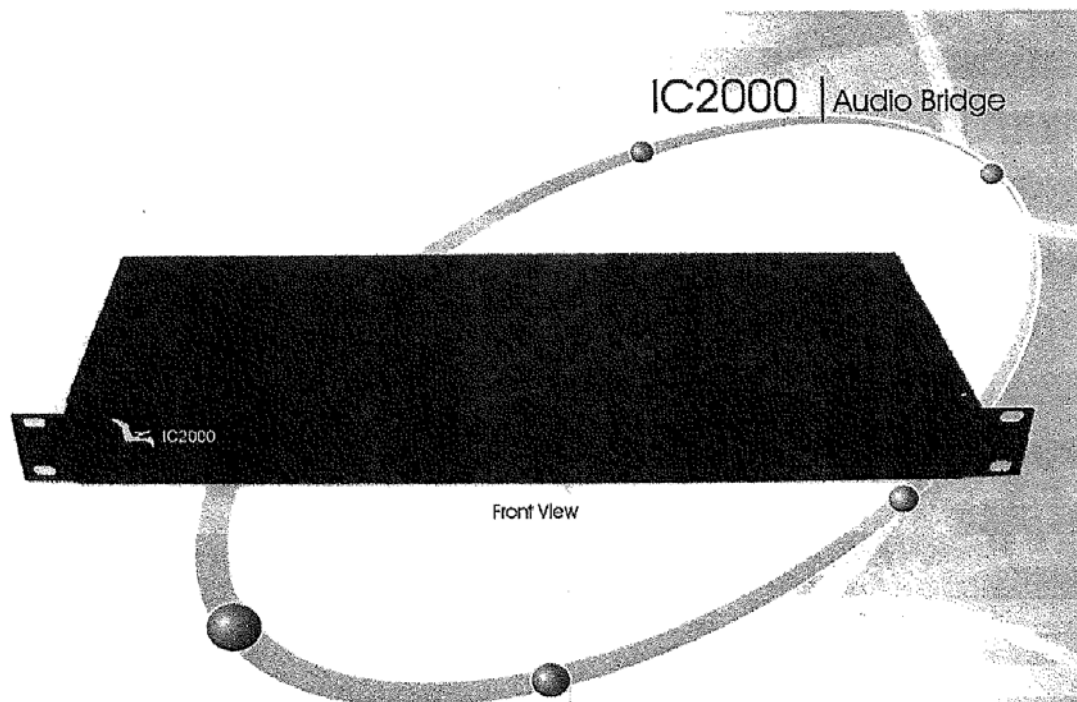
FEATURES:

- 16 Auto sensing 10/100 full duplex, auto MDI/MDI-X ports
- Run blazing speeds up to 200Mbps
- Address Learning and Aging and Data Flow Control for transmission reliability
- Compact size fits into any environment
- Dimensions 6.69" x 1.77" x 10.51"
- (170 mm x 45 mm x 267 mm)
- Unit Weight 2.65 lbs. (1.2 kg)
- Power 100-240V AC, 50-60 Hz
- Certifications FCC Class A, CE
- Operating Temp. 32°F to 122°F (0°C to 50°C)
- Storage Temp. -40°F to 158°F (-40°C to 70°C)
- Operating Humidity 20% to 95%, Non-Condensing
- Storage Humidity 20% to 95%, Non-Condensing

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IC2000 | Audio Bridge

Front View

DESCRIPTION:

The Teradon IC2000 Audio Bridge establishes the communication in the Teradon Raptor V. The IC2000 provides audio and data communication over the IP Network.

The IC2000 delivers clear, high-quality voice communication in diverse network conditions. Excellent voice quality in a demanding IP network is consistently achieved via the advanced implementation of standard voice coding algorithms. The IC2000 offers all the key features and capabilities needed in a reliable telephone system. A secure profile upload saves time, expense, and hassle of managing and pre-configuring or reconfiguring equipment for deployment. Teradon understands that security for end user is a fundamental requirement for a solid, carrier-grade telephony service. The IC2000 supports secure, standard encryption-based methods for communication, provisioning and servicing.

The IC2000 provides two ports that can be configured for master phones and the interface to an existing telephone system using FXO port.

FEATURES:
- Rugged Rack Mount Metal Case
- 10/100Mbps Fast Ethernet
- Configurable via Built-in Web Server
- Windows Based Utility for IP Configuration
- Upgradable Firmware from Remote-PC via Ethernet
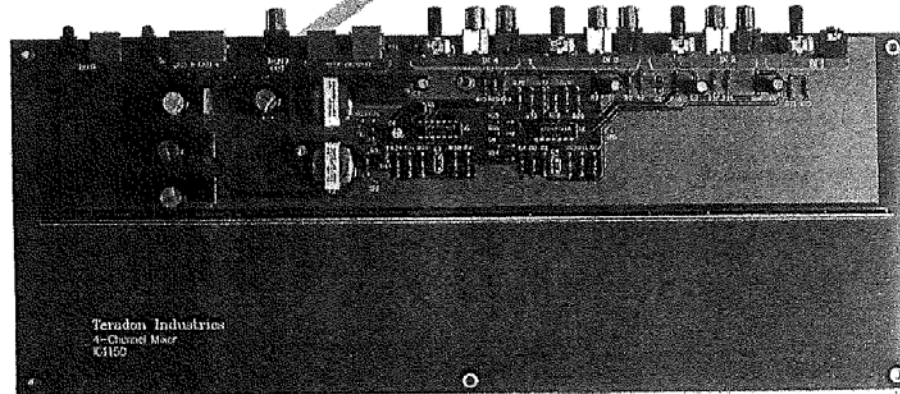- Dimensions: 19"W x 1.75" H x 6" D

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IC1150 | 4 - CHANNEL MIXER CARD

DESCRIPTION:

The IC1150 4 - Channel Mixer card enables four audio devices to be mixed into one output for use with intercom systems. This feature rich card has three pairs of RCA and one stereo mini jack Input. Each input comes with it's own volume control to equalize all audio to the output. The single output has a variety of interfaces including RJ45, RCA and a terminal block for those hard to find connectors.

FEATURES:

- 3 RCA input Ports
- 1 Stereo Mini Jack input Port
- Mute control input to silence output on command
- Mute Indicator
- Power Indicator
- RJ45 Telephone Output Port
- RCA Output Port
- Terminal Block Output

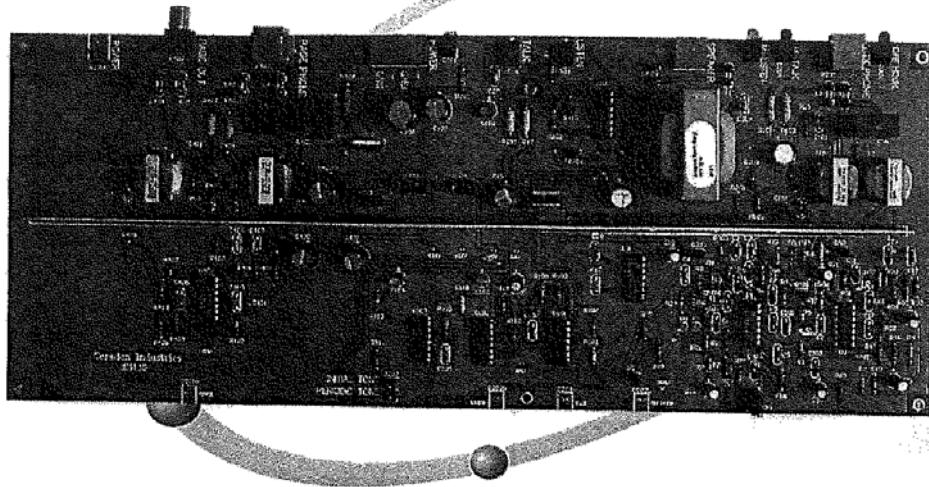## OPTIONAL:
Also available IC1170R (19" RACK MOUNT UNIT)

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IC1130 | VOX CARD

DESCRIPTION:

IC1130 VOX card has dual audio paths, for Auto-Bi-Directional (switching audio) and telephone interface to audio line out converter. The five watt amplifier guarantees crystal clear audio along with adjustments for talk and listen sound sensitivity. LED Indicators are included for Off-Hook, Talk mode and Listen mode. Built-in tones are available for announcement and periodic toning.

FEATURES:
- 5 watt amplifier on board
- Direct telephone interface
- 25 Volt speaker interface
- On-board (disableable) tones for announcement and periodic toning
- Indicator for Off-Hook
- Indicator for Talk mode
- Indicator for Listen mode
- Adjustments for talk and listen sound sensitivity
- Input power: 16 V AC/DC to 36 V AC/DC

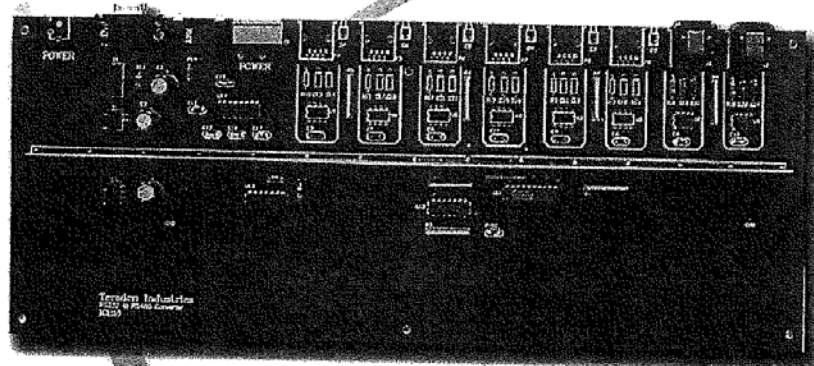## OPTIONAL:
Also available IC1130R (19" RACK MOUNT VOX UNIT)

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IC1110 | RS232-485 CONVERTER CARD

DESCRIPTION:

The IC1110 RS232 to RS485 Converter Card converts 1 DB9 connector (RS232) up to 8 RJ45 connectors (RS485) for campus wide intercom solutions. Sends data from intercom headend to remote speaker card locations. The IC1110 is designed for reliability and durability. The conversions are seamless and special innovative circuitry guarantees communication when most needed. Bright LED indicators for each comm port provides a quick glance of communication traffic.

FEATURES:

- 1 RS232 port (DB9 female)
- Power Indicators
- 2 to 8 RS485 ports (RJ45)
- 8 Port Indicators for communication traffic
- Input power: 8 to 36 VAC/DC
- Up to 120K baud data rates

OPTIONAL:

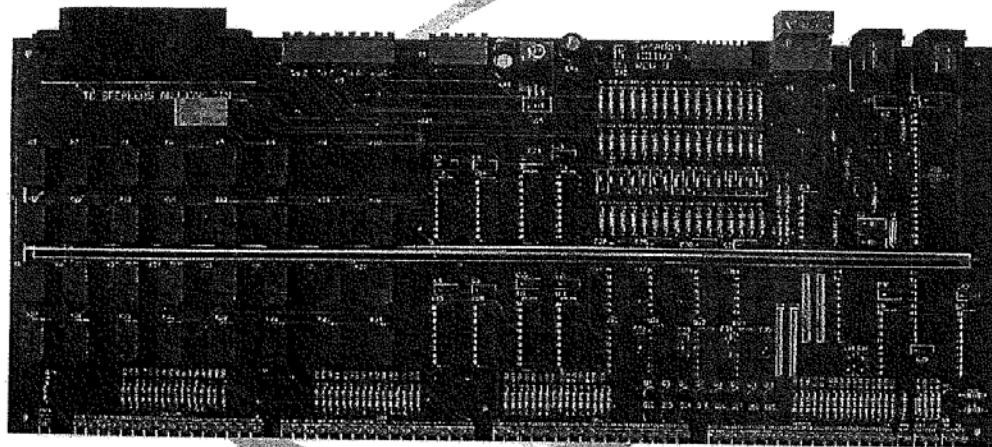Also available IC1110R (19" RACK MOUNT UNIT)

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IC1100 | SPEAKER CARD

DESCRIPTION:

The IC1100 speaker card has plenty of features for audio paths including paging and intercom. Sixteen audio channels per card and inputs for call-ins which include on-board support for normal, privacy, and priority types.

Each card uses two auxiliary relays for user designed purposes. Communication is controlled via RS485, addressable up to 253 boards on a single communication path. The IC1100 comes with a quick reference printed on the board with seventy easy to see LED indicators for relay positions, communications, power and call-in activity.

FEATURES:
- Input power: 24 VDC
- 16 channel audio routing switch
- Dual audio paths
- 16 inputs for call-ins
- 2 auxiliary relays for user defined purposes
- RS485 communication controlled
- Addressable, up to 253 boards can exist on the same communication path
- Indicators for relay positions, communications, power and call-in activity

OPTIONAL:
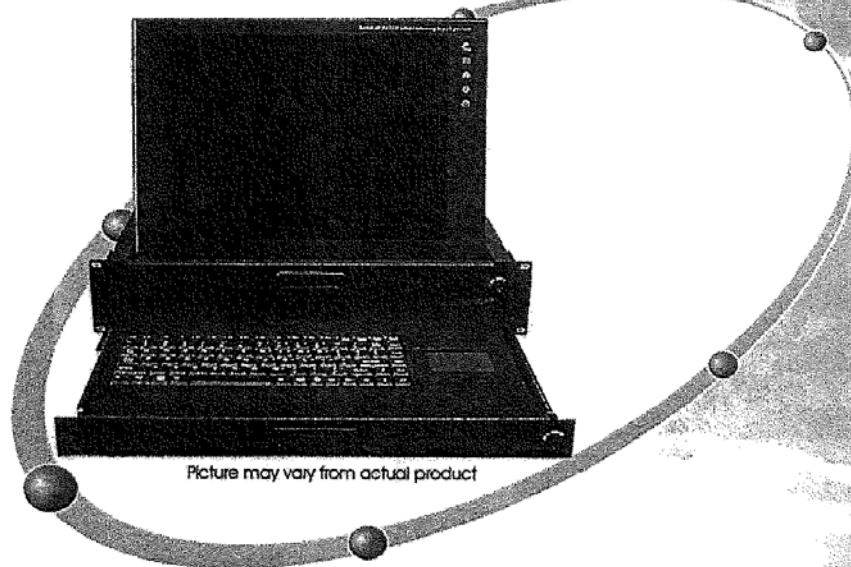Also available IC1100R (19" RACK MOUNT SPEAKER UNIT)

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RMM425 | RACK MOUNTABLE 15" TFT MONITOR, KEYBOARD, & MOUSE ENSEMBLE

Picture may vary from actual product

DESCRIPTION:

The **Teradon** RMM425 rack mountable 15" TFT monitor, keyboard and touch pad ensemble provides high contrast, wide viewing angle display in only 2RUs. The RMM425 comes equipped with a 95 key US Keyboard and a Touchpad mouse. The TFT display connects directly to a standard video output via a 15-pin VGA connector and does not require any additional drivers or proprietary interface adapters. Unit is offered in standard black.

FEATURES:

- 2U (3.5" high) of vertical 19" rack-mount space
- 17" deep for 15" LCD
- 2U Dual Slides allows see LCD through closed glass cabinet door
- High-brightness 450-nit,TFT LCD Panel
- High contrast-ration active TFT LCD flat panel integrated folding display
- 1240 x 768 resolution.
- Industrial-grade heavy-duty steel construction with a built-in lock to prevent unauthorized console access
- Touch sensitive glide pad
- 2 Keys for Front Access Lock
- US Power cord
- Power Adapter 110/220V
- User Manual

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DESCRIPTION:

Teradon's A9001 Executive Phone provides all the controls and displays necessary to initiate, respond to, and carry out two-way voice communication on the **Teracom** Computer Controlled Intercom. It also facilitates program distribution and tone signaling between itself and other stations on the **Teracom**.

The A9001 offers on demand one-button functions such as bells, pages, and one program source for external devices such as an MP3 Player or Radio. These functions can be distributed throughout the entire system, or specifically to any one of the available zones, or available rooms. There is an Emergency button to initiate the emergency tone. The emergency tone can be interrupted and announcements made simply by picking up the handset and pressing a button. When no calls are present, the digital display shows the date and time in 12 hour AM/PM mode.

FEATURES:

- On demand one-button bells
- Paging, time & unlimited program zones
- Volume control built in on the keyboard
- Handset or hands free operated
- Available in two colors: Almond & Charcoal
- Supports True Caller ID

- Supports ASDI Text Display
- Select the entire system, any general-purpose zone, or any individual room.
- Calls are prioritized in the order they are received as well as by urgency.
- Date and 12 hour AM/PM time display

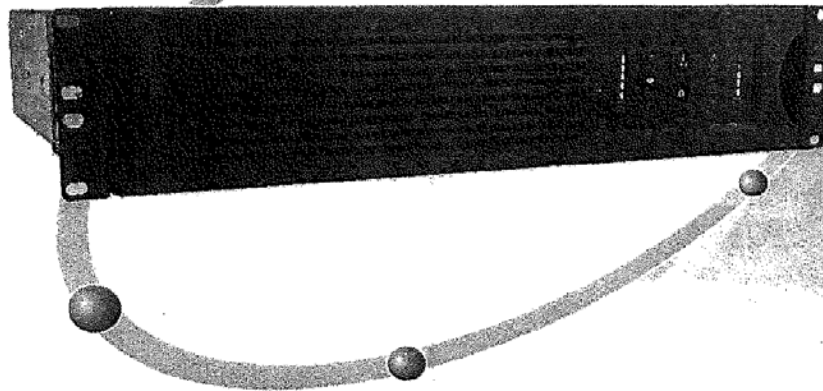** When ordering please specify color with a suffix of A for Almond or C for Charcoal.

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TUPS | UNINTERRUPTIBLE POWER SUPPLY

DESCRIPTION:

The Teradon TUPS Uninteruptible Power Supply is designed to ensure uptime for all of our systems. It features Automatic Self Test, Automatic Voltage Regulation (AVR), Building wiring fault Indicator, Built-In SmartSlot, Hot Swap Batteries, Intelligent Battery Management, Line-Interactive, Load Meter, Network-grade line conditioning, Overload Indicator, Rack Mount, Replace Batt. Indicator, Scalable Run Time, Sine-wave output, Software, Status Indicator LED's, and User Replaceable batteries.

Specifications:
Communications & Management
Interface port: DB-9 RS-232
Available Smart Slot Interface Quantity: 1
Control panel: LED status display with load and battery bar-graphs and On Line : On Battery : Replace Battery and Overload Indicators, LED status display with On Line : On Battery : Replace Battery and Overload Indicators
Audible alarm: Alarm when on battery : distinctive low battery alarm : configurable delays
Emergency Power Off (EPO): Optional
Software Included

Output
Output power capacity: 1,400 VA / 1,050 Watts
Nominal output voltage: 120 V
Output Connections: (6)NEMA 5-15R

>>cont. Reverse side

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TUPS | UNINTERRUPTIBLE POWER SUPPLY

Specifications: (cont.)

Input
Nominal input voltage: 120 V
Input frequency: 50/60 Hz +/- 3 Hz (auto sensing)
Input Connection Type: NEMA 5-15P
Cord Length: 6 feet (1.83 meters)
Input voltage range for main operations: 92 - 147 V
Input voltage adjustable range for main operations: 86 - 154 V

Surge Protection and Filtering
Surge energy rating: 800 joules
Filtering: Full time multi-pole noise filtering : 0.3% IEEE surge let-through : zero clamping response time : meets UL 1449

Runtime
Typical backup time at half load: 23.5 minutes (525 Watts)
Typical backup time at full load: 6.6 minutes (1050 Watts)

Batteries
Battery type: Maintenance-free sealed Lead-Acid battery with suspended electrolyte ; leakproof

Physical
Maximum height dimensions: 5.12 inches (13.00 cm)
Maximum width dimensions: 17.00 inches (43.18 cm)
Maximum depth dimensions: 15.50 inches (39.37 cm)
Net weight: 70.00 lbs (31.82 kg)
Color: Beige

Environmental
Operating Environment: 0 - 40 °C (32 - 104°F)
Operating Relative Humidity: 0 - 85%
Operating Elevation: 0-10000 feet (0-3000 m)
Storage Temperature: -15 - 45 °C (5 - 113°F)
Storage Relative Humidity: 0 - 95% Non-condensing
Storage Elevation: 0-50000 feet (0-15000 m)
Online thermal dissipation: 155 BTU/hr

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T-1S60, T-1S120, T-1S240 | Power Amplifiers

Front View

WHICH MODEL

DESCRIPTION:

T-1S60, T-1S120, and T-1S240 are heavy-duty public address power amplifiers that deliver clean audio power from 60 to 240 watts RMS with less than 0.5% distortion.

T-1S60, T-1S120, and T-1S240 power amplifiers are rugged and overbuilt to provide years of reliable service. They are equipped with torroidal transformers, extensive heat-sinking, forced fan cooling and protective circuits against short circuit, clipping and over-temperature.

FEATURES:

- Three sizes of out put; 60watt, 120watts, and 240watts
- LED status indicators
- Short-circuit, clipping and high-temp protection
- Volume control
- 2U rack mount chassis with handholds
- Input Sensitivity: 775mV/0dB
- Noise to Signal Ratio: >90dB

- Frequency Response: 50Hz-15KHz±3dB
- THD: <1%
- Radiator Method: Compulsive wind cooling
- Protection: Power, Overheat, Overload and Short circuit
- Power Supply: 110V/60Hz
- Dimension (mm): 484x315x88
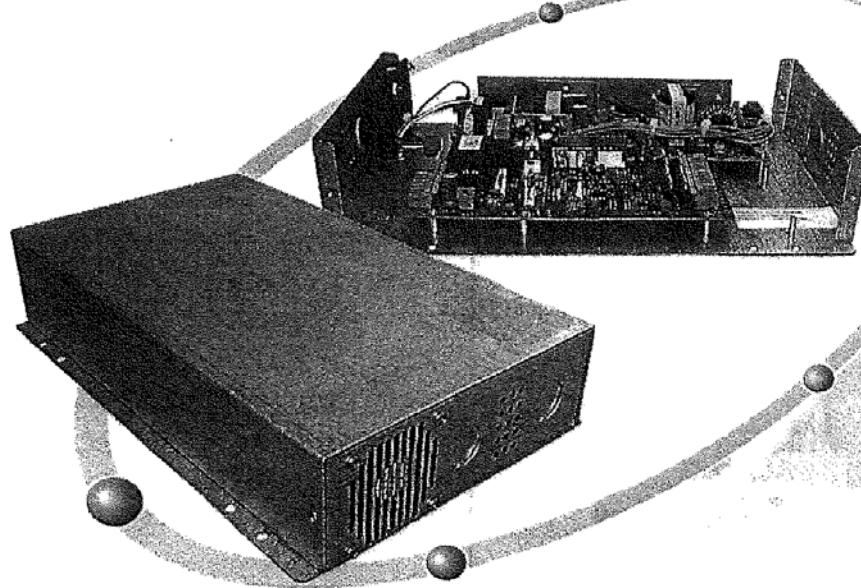- Weight: 9.3kg(T-1S60), 9.5kg(T-1S120), 13.2kg(T-1S240)

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A7061 | RS485 to 2-WIRE DIGITAL COMMUNICATION CONVERTER BOX

DESCRIPTION:

The Teradon A7061 Converter Box transfigures RS485 signal input to 2-wire digital communication protocol. The box can also be used as a booster by accepting the 2-wire protocol and providing additional power for the system. The Converter Box includes a powerful 150 watt power supply that drives the A7060 series digital clocks and the T1497/98 analog clocks. The A7061 Converter Box comes standard with an aluminum metal case and is easy to install.

FEATURES:

- Size: 11.06" D x 7.75" W x 2.0" H
- Input Voltage: 85 - 132 Volt | 176 - 265 Volt
- Input Power: 460 W
- Output Current: 6 amp
- Output Voltage: 24 Volt
- Input Signal: RS485, 2-wire digital communication protocol

(All specifications subject to change without notice.)

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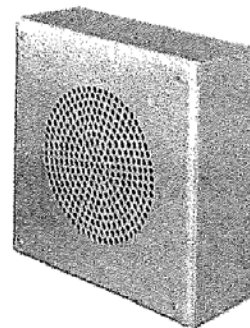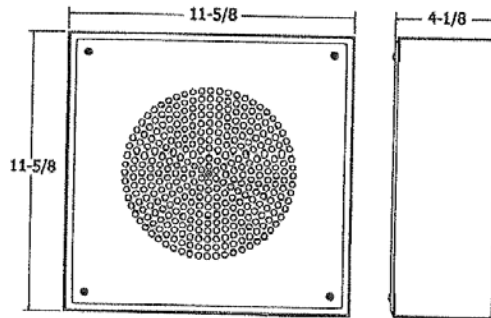Office 505.898.7230 | Toll free 800.326.8911 | Fax 505.899.2403

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Quam

SYSTEM 6VP
Vandal Resistant, Paging Horn Speaker System

0601 - VANDAL RESISTANT SPEAKER ASSEMBLIES

GENERAL DESCRIPTION
The Quam SYSTEM 6VP is a complete loudspeaker assembly with double re-entrant horn, compression type loudspeaker, 25 and 70.7V universal transformer, baffle is 16 gage steel with vandal-resistant internal baffle; enclosure is 16 gage CRS with #8-32 'pin-in-hex' hardware.
Finish: White baked epoxy hybrid finish.

INTENDED USE
Outdoor or indoor environment, vertical or horizontal surface mount

Program Material: Voice and signal tone

SYSTEM COMPONENTS

Loudspeaker:	H16
Transformer:	Integral to unit, 16W, 25 and 70.7V, 5 taps at –3dB levels
Enclosure:	SE1WVP
Baffle:	BS8VP

RECOMMENDED ADDITIONAL QUAM COMPONENTS
0602– Vandal Resistant Intercom Assemblies
0603– Vandal Resistant Components

AUDIO SPECIFICATIONS:

Speaker Type:	Compression, re-entrant horn
Average Sensitivity:	110 dB-SPL, 1W / 1M
Power rating:	16W-RMS, EIA 426A Standard
Calculated Output:	121dB-SPL, 16W/ 1M
Frequency Response:	350 -10 kHz
Nominal Coverage Angle:	90° Included Angle, -6 dB / 2 kHz, Half Space
Audio Connection:	7" long, color-coded tinned wires, pre-cut

Recommended construction sequences, installation instructions and A&E Specifications are available in various formats on the Quam Architects' and Engineers' Resources CD or on the web at: www.quamspeakers.com

06 CORRECTION / DETENTION

RoHS Compliant   IBEW 1031   MADE IN CHICAGO   Since 1930

TSYS6VP_07MR02

Long Beach Unified School District Single Source Resolution for
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Quam

C5/BU/CK1/x
Clock Baffle with Speaker, 25-70.7V Transformer

0102 – SURFACE MOUNTED LOUDSPEAKER SYSTEM

Dimensions: 20-5/16, 18-1/2, 14-3/8, 10, 1/2

Clock supplied by others

Loudspeaker Baffle shown in 'RIGHT' position

Clock supplied by others

Loudspeaker Baffle shown in 'DOWN' position
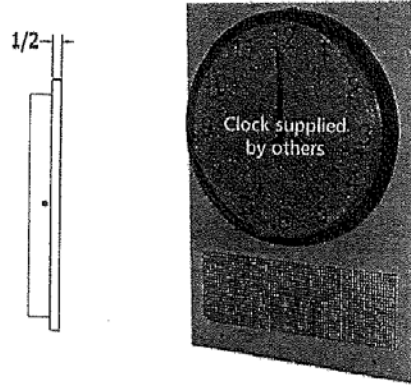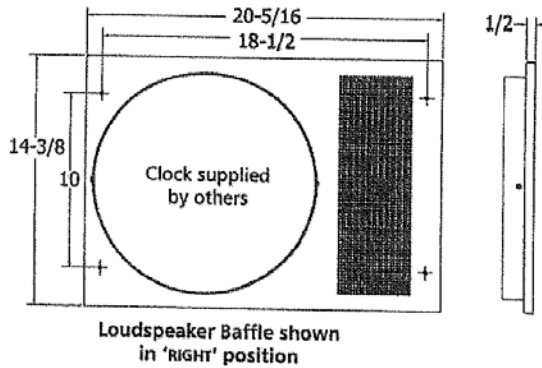
GENERAL DESCRIPTION
The Quam C5/BU/CK1/x is a steel clock baffle with 8" frame loudspeaker, 25 and 70.7V universal transformer. Clock mechanism is supplied by others.
Finish: White baked epoxy hybrid.

INTENDED USE
Used with listed analog repeater clock mechanisms supplied by others. Loudspeaker may be oriented up, down, left or right of the display; indoor environment.
Program Material: Music, voice and signal tones

LISTED SUPPLIERS
| For DuKane® system | Order as: C5/BU/CK1/D |
| For Sapling® system | Order as: C5/BU/CK1/S |

SYSTEM COMPONENTS:
| Loudspeaker | 8C5PAX |
| Transformer | TBLU (5W, 25 and 70.7V, 5 taps at –3dB levels) |

REQUIRED ADDITIONAL QUAM COMPONENT
Section 0401.2– ES8-CK Flush mount box for CK1 baffle
-or-
Section 0403– SE9W Surface mount box for CK1 baffle

AUDIO SPECIFICATIONS
Speaker Size	8" Frame
Average Sensitivity	92 dB-SPL, 1W/1M
Power Rating	12W RMS, EIA 426A Standard
Calculated Maximum System Output	99 dB-SPL, 5W/1M
Magnet Type, Weight	BeFe Ceramic, 4.8 oz. Nominal
Frequency Response	65Hz– 17 kHz, EIA 426A Standard
Nominal Coverage Angle	90° Included Angle, -6 dB/ 2 kHz, Half Space
Audio Connection	7" Long Tinned Wires, Pre-cut

Recommended construction sequences, installation instructions and A&E Specifications are available in various formats on the Quam Architects' and Engineers' Resources CD or on the web at: www.quamspeakers.com

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Quam

0403– SURFACE MOUNT, SQUARE

GENERAL DESCRIPTION
The Quam SE9W is a steel surface mount box for the Quam C5/BU/CK 1/x clock baffle, supplied separately. Finish: White baked epoxy hybrid.

INTENDED USE
Indoor environment, in either horizontal or vertical alignment.

REQUIRED ADDITIONAL QUAM COMPONENT
Section 0102– C5/BU/CK1/x Clock Baffle Loudspeaker

MECHANICAL SPECIFICATIONS

Height (Vertical orientation)	20-3/16"
Width (Vertical orientation)	14-1/4"
Depth	2-3/4"
Clock Baffle Attachment	4x #8 x 32 Tinnerman clips
Mechanical Access to Surface	2x #10 Keyhole slots 2x #10 holes
Electrical Access	4" X 4", center of enclosure

Recommended construction sequences, installation instructions and A&E Specifications are available in various formats on the Quam Architects' and

BACK BOXES / MOUNTING DEVICES

04

RoHS Compliant   LU IBEW 1031   MADE IN CHICAGO

TSE9W_09NO03

Long Beach Unified School District Single Source Resolution for
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american time & signal company
The Clock Experts

AllSync Plus®
Surface & Double Dial
Plastic Case
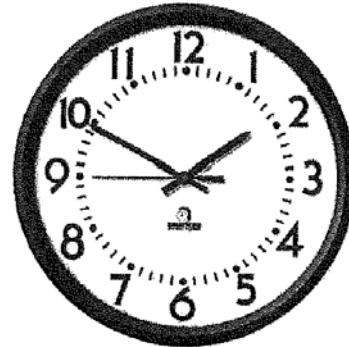
FEATURES
* 5 Year Warranty
* UL Listed
* Microprocessor controlled movement
* 15 minutes of backup power (no batteries required)
* Accuracy to within ±1 second of a master clock
* Reduced power consumption
* Attractive modern design
* High impact plastic case
* Shatter-resistant polycarbonate crystal
* Diagnostic LED

DESCRIPTION

The **american time**™ AllSync Plus clocks, with "Chameleon Intelligence" are provided in **round only** high impact black plastic cases with clear polycarbonate crystals and bold, black numerals and minute markers on a non-yellowing white dial. Stylish hour and minute hands are aluminum with a black finish and a red sweep hand. Other bezel colors available. Consult factory.

The **american time**™ AllSync Plus clock is designed to work with multiple master clocks and correction signals. This unit is programmed to identify the signal it receives from the master and operate as that style of clock. Changing clock operation from one style to another is as easy as unplugging the clock from one system and plugging it into another. If needed, changing the placement of 2 small jumpers on the circuit board can change the voltage required to run this clock from 120vac to 24vac or 24vac to 120vac. This clock provides 15 minutes of backup run power without the use of batteries. If a power outage should last longer than 15 minutes, the clock will synchronize to the master clock at the hourly and 12 hour correction cycles.

Correction Signals
Works on:

* Hourly correction: 7-9 seconds starting at the 57th minute and 54th second. 12 hour correction: 13-18 seconds starting at 5:57:54 (am and pm).

* Hourly correction: 24-28.5 seconds starting at the 0 minute and 0 second. 12 hour correction: 24-32 minutes starting at 6:00:00 (am and pm).

* *Hourly correction: 54-56 seconds starting at the 58th minute and 5th second. 12 hour correction: 10 pulses of 94-96 seconds starting at 5:05:00 (am and pm) and repeating every 2 minutes.

* Hourly correction: 24-26 seconds starting at 0 minute and 0 second. 12 hour correction: 25 pulses of 24-26 seconds starting at 6:00:00 (am and pm) and repeating every 60 seconds.

* Hourly correction: 63-67 seconds starting at the 58th minute and 0 second. 12 hour correction: 14 pulses of 63-67 seconds starting at 5:06:00 (am and pm) and repeating every 2 minutes.

* *Hourly correction: 54-56 seconds starting at the 58th minute and 5th second. 12 hour correction: 12 pulses of 63-67 seconds starting at 5:05:00 (am and pm) repeating every 90 seconds.

*Note:
When switching between these correction protocols, you must use a different correction protocol to complete the transition. The AllSync Plus clock needs to distinguish between hourly corrections before it can change correction protocols internally.

PS03059 Rev D

Long Beach Unified School District Single Source Resolution for
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SPECIFICATIONS
* 24vac/60 Hz or 110vac/60 Hz
* Current draw: Single dial:
  24vac, 1 watt, .043 amps
  110vac, 3 watts, .028 amps
  Double dial:
  24vac, 2 watts, .086 amps
  110vac, 6 watts, .056 amps

Maximum operating voltage: 24vac setting = 40vac
110vac setting = 150vac
Minimum operating voltage: 24vac setting = 15vac
110vac setting = 50vac

GENERAL
Types of secondary clocks compatible with AllSync Plus:

Cincinnati	WS*, *D-8, *D-10, *D-12 Series
Dukane	24SS* Series, 240* Series
Edwards	*010 & *012 Series
Faraday	2315*, 2316*, 2335*, 2336*, 2370*, 2372*, 2380*, 2382*, 2311*, 2320*, 2331*, 2314*, 1310 through 1431 Series and 2420* through 2431* Series
Honeywell	ST402A* Series
Lathem	Type SS* Series
National Time	*EX-HH and *EX-LL Series
Simplex® & IBM	77* Series, 82* Series, 2310 – 92* Series, 6310 – 92* Series

*Indicates more numbers before or after.

ORDERING INFORMATION

Part #	Description	
U44BAAA904	10" Rd Surface	110vac
U44BABA904	10" Rd Surface	24vac
U54BAAA304	12" Rd Surface	110vac
U54BABA304	12" Rd Surface	24vac
U53BAAA204	12" Rd Double dial wall	110vac
U53BABA204	12" Rd Double dial wall	24vac
U52BAAA204	12" Rd Double dial ceiling	110vac
U52BABA204	12" Rd Double dial ceiling	24vac

MODEL NOT
IDENTIFIED

Note:
Double dial mounting requires a 4" square electrical box in the wall or ceiling. Surface clocks have a molded in hanger in the plastic case used to secure the clock to a bracket (pictured below) to a single gang electrical box.

SURFACE MOUNT

Double Dial 12" only

Wall Mount
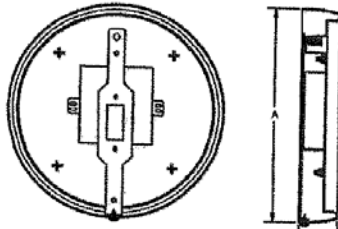
Ceiling Mount

OUTSIDE DIMENSIONS
Surface

SIZE	A	B
10"	10⅜"	2½"
12"	13¼"	2⅝"

Note: 12" surface mount clocks include security bracket.
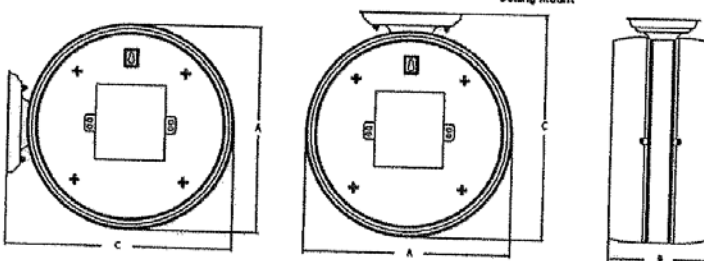
OUTSIDE DIMENSIONS
Double Dial (12" only)

SIZE	A	B	C
12"	13¼"	8⅝"	15"

At American Time & Signal, we continually strive to improve our products to meet our customers' needs and to provide the best possible value. The above specifications are believed to be correct, are subject to change without notice and may otherwise vary from the above. Please call if you need verification of any specifications or the suitability of a particular product for a particular application.
© American Time & Signal Company

PS03059 Rev D

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

9842
Multi-Conductor – Low Capacitance
Computer Cable for EIA RS-485 Applications

Contact Cables
The Cable Specialists

Description
24 AWG stranded (7x32) TC conductors, polyethylene insulation, twisted pairs, overall Beldfoil® (100% coverage) + TC braid shield (90% coverage), 24 AWG stranded TC drain wire, PVC jacket.

Put Ups and Colours

Item #	Putup	Ship Weight	Jacket Colour	Notes	Item Description
9842 060100	100 FT	5.800 LB	CHROME		2 PR #24 PE SH PVC CHR
9842 0601000	1,000 FT	57.000 LB	CHROME	C	2 PR #24 PE SH PVC CHR
9842 060500	500 FT	29.500 LB	CHROME	C	2 PR #24 PE SH PVC CHR

Notes:
C = Create Reel Put-up

Physical Characteristics (overall)

Conductor – AWG

# Pairs	AWG	Stranding	Conductor Material
2.000	24	7x32	TC – Tinned Copper

Insulation – Insulation Material

Ins Material
PE – Polyethylene

Outer Shield – Outer Shield Material

Layer #	Outer Shield Trade Name	Type	Outer Shield Material	Coverage (%)
1	Beldfold®	Tape	Aluminium Foil-Polyester Tape	100
2		Braid	TC – Tinned Copper	90

Outer Shield Drain Wire AWG

AWG	Stranding	Drain Wire Conductor Material
24	7x32	TC – Tinned Copper

Outer Jacket – Outer Jacket Material

Outer Jacket Material
PVC – Polyvinylchloride

Overall Cabling – Overall Nominal Diameter: 0.340 In.

Pair Colour Code Chart

Number	Colour
1	White/Blue and Blue/White
2	White/Orange and Orange/White

Pair Lay Length & Direction

Lay Length (In.)	Lay Length (In.)	Lay Length	Twists/ft. (twist/ft)
1.000	Left Hand Lay	12.000	12.000

Mechanical Characteristics (overall)

Operating Temperature Range	-30°C to +80°C
UL Temperature Range	80°C
Bulk Cable Weight	62 lbs/1000ft
Max. Recommended Pulling Tension	87 lbs
Min. Bend Radius (Install)/Minor Axis	3.500 In.

Applicable Specifications and Agency Compliance (overall)
Application

NEC (UL) Specification	CM
CEC/C (UL) Specification	CM
CSA Specification	UL Style 2919 (30 V 80°C)
EU CE Mark	
EU RoHS Compliant (commence date: dd/mm/yyyy)	(01/01/2004)

Plenum/Non-Plenum

Plenum	
Plenum Number	82842

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Electrical Characteristics (overall)

Nom. Characteristics Impedance

Impedance (Ohm.)
120.000

Nom. Capacitance Conductor to Conductor

Capacitance (pF/ft)
12.800

Nom. Capacitance Conductor to Other Conductor & Shield

Capacitance (pF/ft)
23.000

Nominal Velocity of Propagation

VP (%)
66

Nominal Delay

Delay (ns/ft)
1.600

Nominal Conductor DC Resistance

DCR @ 20°C (Ohm/1000 ft)
24.000

Nominal Outer Shield DC Resistance

DCR @ 20°C (Ohm/1000 ft)
2.200

Nominal Attenuation

Attenuation (dB/100 ft.)
0.6 (@ 1 MHz)

Max. Operating Voltage – UL

Voltage
300 V RMS

Max. Recommended Current

Current
2.1 Amps per conductor @ 25°C

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Description

18 AWG pairs stranded (19x30) tinned copper conductors, twisted pairs, PVC insulation, individually shielded (100% coverage), PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

3	18	19x30	TC - Tinned Copper

Insulation

Insulation Material:

PVC - Polyvinyl Chloride

Inner Shield

Inner Shield Material:

Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100

Inner Shield Drain Wire AWG:

20

Inner Shield Drain Wire Stranding: 7x30

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

Outer Shield

Outer Shield Material:

Unshielded

Outer Jacket

Outer Jacket Material:

PVC - Polyvinyl Chloride	.053

Outer Jacket Ripcord: Yes

Overall Cabling

Overall Cabling Lay Length & Direction:

Left-hand Lay

Overall Nominal Diameter: 0.423 In.

Pair

Pair Color Code Chart:

1	Black & Red #1
2	Black & Red #2
3	Black & Red #3

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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

BELDEN
SENDING ALL THE RIGHT SIGNALS

9369 Multi-Conductor - 300V Power-Limited Tray Cable

Mechanical Characteristics (Overall)

Operating Temperature Range:	-30°C To +105°C
UL Temperature Rating:	105°C
Bulk Cable Weight:	100 lbs/1000 ft.
Max. Recommended Pulling Tension:	220 lbs.
Min. Bend Radius (Install)/Minor Axis:	4.250 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

NEC/(UL) Specification:	PLTC, ITC, CMG
CEC/C(UL) Specification:	CMG
EU CE Mark:	Yes
EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	04/01/2005
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

Flame Test

UL Flame Test:	UL1685 FT4 Loading
C(UL) Flame Test:	FT4
IEEE Flame Test:	1202
ICEA Flame Test:	T-29-520

Suitability

Suitability - Indoor:	Yes
Suitability - Outdoor:	Yes
Suitability - Burial:	Yes
Sunlight Resistance:	Yes

Plenum/Non-Plenum

Plenum (Y/N):	No

Surface Printing (Overall)

Surface Printing:	LEGEND: BELDEN 9369 E34972 3PR18 (UL) CMG 105C OR PLTC OR ITC SUN RES DIR BUR OR AWM 2464 80C 300V OR C(UL) CMG----FT4 IEEE 1202 (2 FT, 7 DIGIT SEQUENTIAL NUMBER) FEET

Electrical Characteristics (Overall)

Nom. Inductance:

.18

Nom. Capacitance Conductor to Shield:

102

Nom. Capacitance Conductor to Conductor:

57

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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

BELDEN
SENDING ALL THE RIGHT SIGNALS

9369 Multi-Conductor - 300V Power-Limited Tray Cable

Nom. Conductor DC Resistance:

5.96

Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: 8.300 Ohm/1000 ft

Max. Operating Voltage - UL:

300 V RMS (PLTC) CMG)
150 V RMS (ITC)

Max. Recommended Current:

6.4 Amps per conductor @ 25°C

Put Ups and Colors

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9369 0601000	1,000 FT	97.000 LB	CHROME	C	3 PR #18 PVC SH PVC
9369 060500	500 FT	49.500 LB	CHROME	C	3 PR #18 PVC SH PVC

Notes:
C = CRATE REEL PUT-UP.

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UL Instrumentation Cable
300V Power-Limited Tray Cables
Industrial Grade Sunlight- and Oil-Resistant Jackets

Description	Part No.	No. of Pairs	Color Code	Standard Lengths		Standard Unit Weight		Jacket Thickness		Nominal OD		Maximum Pull Tension		Minimum Bend Radius	
				Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	Lbs.	N	Inch	mm
18 AWG Pairs Stranded (19x30) Tinned Copper Conductors • Twisted Pairs															
Unshielded • PVC Insulation • Chrome PVC Jacket															
NEC: PLTC, ITC, CMG CEC: CMG FT4 IEEE 1202/383 ICEA T-29-520	9409	1	E2	U-500 U-1000	U-152.4 U-304.8	15.0 28.0	6.8 12.7	.037	.94	.230	5.84	49	218	2.25	57.15
Overall Beldfoil® Shield (100% Coverage) • PVC Insulation • Chrome PVC Jacket															
NEC: PLTC, ITC, CMG CEC: CMG FT4 IEEE 1202/383 ICEA T-29-520	9318	1	E2	U-500 U-1000	U-152.4 U-304.8	17.5 33.0	7.9 15.0	.037	.94	.233	5.92	60	267	2.25	57.15
	9552	2	E2	500 1000	152.4 304.8	35.5 69.0	16.1 31.4	.042	1.07	.368	9.34	65	289	3.70	93.98
	9553	3	E2	500 1000	152.4 304.8	49.5 98.0	22.0 49.4	.053	1.35	.411	10.44	145	645	4.10	104.14
	9554	4	E2	500 1000	152.4 304.8	57.0 112.0	25.8 50.8	.053	1.35	.447	11.35	187	832	4.50	114.30
	9556	6	E2	500 1000	152.4 304.8	78.5 153.0	35.7 69.5	.053	1.35	.497	12.62	270	1201	5.00	127.00
	9559	9	E2	500 1000	152.4 304.8	108.0 215.0	49.0 97.6	.053	1.35	.579	14.71	395	1757	5.80	147.32
	9563	11	E2	500 1000	152.4 304.8	133.0 270.0	60.4 122.5	.063	1.60	.665	16.89	478	2126	6.75	171.45
	9565	15	E2	500 1000	152.4 304.8	169.0 342.0	76.8 155.5	.063	1.60	.739	18.77	640	2847	7.50	190.50
Individually Shielded (100% Coverage) • PVC Insulation • Chrome PVC Jacket															
NEC: PLTC, ITC, CMG CEC: CMG FT4 IEEE 1202/383 ICEA T-29-520	9368	2	E2	500 1000	152.4 304.8	37.5 73.0	17.0 33.2	.042	1.07	.378	9.60	125	558	3.75	95.25
	9369	3	E2	500 1000	152.4 304.8	55.0 109.0	25.0 49.5	.053	1.35	.423	10.74	220	979	4.25	107.95
	3029A	4	E1	Bulk 1	Bulk	—	—	.053	1.35	.461	11.71	296	1317	4.50	114.30
	9388	4	E2	500 1000	152.4 304.8	71.5 135.0	32.5 61.4	.053	1.35	.461	11.71	296	1317	4.60	116.84
	9389	6	E2	500 1000	152.4 304.8	97.0 190.0	44.1 86.4	.053	1.35	.538	13.67	440	1957	5.25	133.35
	9390	9	E2	500 1000	152.4 304.8	137.5 270.0	63.0 123.6	.064	1.63	.652	16.56	666	2963	6.50	165.10
	9391	11	E2	500 1000	152.4 304.8	156.5 321.0	72.0 145.9	.064	1.63	.729	18.52	815	3626	7.25	184.15
	9392	15	E2	500 1000	152.4 304.8	209.0 426.0	95.0 194.5	.064	1.63	.808	20.52	1100	4893	8.00	203.20
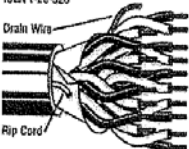
E1, E2 – Refer to Technical Information section for color code.
Alternate color coding available upon request.

Multiple pair or triad cables have each pair/triad numbered for ease of identification.

1Bulk – Check length available for specific construction.

To Specify:	Conductor, Insulation and Jacket Options**		
	Bare	Tinned	Insulation/Jacket
1234 A E	A	B	PVC/PVC
Start Add or Add for with replace Exposed Part letter code Run rating No. for desired if desired conductor, insulation & jacket	C	D	XLPE/PVC
	K	L	TPE/TPE
	Q	R	XLPE/CPE
	S	T	XLPE/Haloarrest®
	For 1000 and 3000 Series cables only.		

BELDEN

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18 AWG 3 Pairs EPS 300V PLTC / ITC Cable Specification

Lake Cable Part #: T183EPST(19)-BLD

Description: 18 AWG 3 pairs, individually shielded, 300V instrumentation power limited tray cable constructed with stranded tinned copper conductors, polyvinylchloride insulation, aluminum/mylar shields with stranded tinned copper drain wires and an overall polyvinylchloride jacket. Individual conductors are manufactured in accordance with UL Standard 13. Cable is manufactured in the USA in accordance with UL Standards 13 and 2250, listed Type PLTC or ITC, suitable for use in Class I Division II hazardous locations and approved for installation in cable trays per Article 725 of the National Electric Code. Cable may be installed in open air, in ducts or conduits, in trays or troughs and is approved for direct burial and outdoor applications. Jacket is sunlight resistant and cable is (UL) PLTC approved for 300V, 105°C and meets or exceeds the requirements of IEEE 383 and UL 1581 (1685) 70,000 BTU/HR flame tests.

1. Conductor
   1.1 AWG Size & Stranding: 18 AWG, 19 Strands
   1.2 Material: Annealed Tinned Copper
2. Insulation
   2.1 Material: Polyvinylchloride per UL Standard 13
   2.2 Wall Thickness: 0.016" - The minimum at any point shall not be less than 90% of the specified wall thickness
3. Color Code
   3.1 Code: Black x Red, Yellow x Brown, Blue x Orange
4. Assembly
   4.1 Pair/Cable Lay Length: 2.50" LHL, / 4.75" LHL, Nominal
   4.2 Pair Shield: Foil Free Edged Aluminum/Mylar Tape - 100% coverage
   4.3 Pair Drain Wire: 20 AWG, 7 Strand Tinned Copper
   4.4 Pair/Cable Binder: N/A
   4.5 Cable Shield: N/A
   4.6 Cable Drain Wire: N/A
   4.7 Fillers: Available upon request
5. Jacket
   5.1 Material: Polyvinylchloride per UL Standard 13
   5.2 Wall Thickness: 0.053" - The minimum at any point shall not be less than 80% of the specified wall thickness
   5.3 Diameter: 0.406"
   5.4 Color: Gray
   5.5 Weight: 103 lbs./Mft.
6. Markings
   6.1 Type: Cable shall be permanently identified via surface inkjet print
   6.2 Legend: LAKE CABLE E171202 18AWG 3PR EPS (UL) ITC OR PLTC 105°C
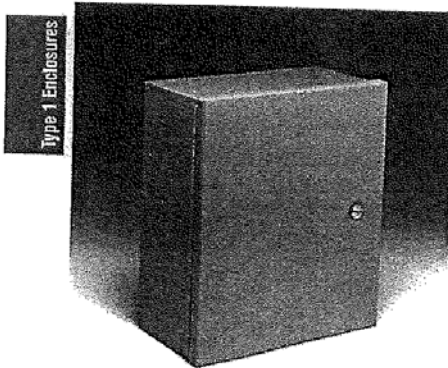   SUN RES DIR BUR FT-4   "ROHS"
7. Standards
   7.1 UL listed as Type PLTC per UL Standard 13
   7.2 UL listed as Type ITC per UL Standard 2250
   7.3 UL approved for Sunlight Resistant & Direct Burial applications
   7.4 Individual conductors pass UL VW-1 flame test
   7.5 Cable meets IEEE 383 & UL 1581 (1685) 70,000 BTU/HR flame test requirements
   7.6 All materials used in the manufacture of this cable are RoHS compliant

ALL SPECIFIED PARAMETERS ARE NOMINAL AND SUBJECT TO VERIFICATION

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Type 1 Enclosures

Type 1 Medium Panel Enclosures
Data Sheet

Construction
- Enclosure and door are fabricated from code gauge steel, (see table)
- Enclosure body has mounting holes on the back which are accessible with or without the optional panel installed
- Door is secured to the body with a continuous hinge on one side and a flush latch mounted to the opposite side
- Flush latch is designed to operate with either coin or screwdriver
- .375-16 collar studs are provided for mounting optional panel
- No knockouts

Finish
- Wash and phosphate undercoat
- ANSI 61 gray polyester powder finish
- Optional panels have a white polyester powder finish

Application
- Houses electrical controls and instruments in an environment which does not require oil and dust tight specifications
- Protects against contact with enclosed equipment

Accessories
- Panels
- Terminal blocks
- Type 1 flush lock
- Type 1 security latch inserts
- Touch-up paint
- See Accessories section
- #8-32 self tapping screw (10168)

Standards
- UL 50 listed, Type 1
- CSA C22.2 No. 40 certified, Type 1
- Conforms to NEMA standard for Type 1
- IEC 60529, IP30

door stiffener (omit where "B" is less than 30)

.375-16 collar stud and nut (omit center studs where "A" is less than 30)

cover latch (see detail)

.375-16 collar stud and nut (omit center studs where "B" is less than 30)

1.06 if "A" is 24 or less
1.25 if "A" is 30 or more

14 gauge panel (optional)

B-3.00 (76)
B-**

Ø .44 x .81 (11 x 21) mounting hole (2PL)

A (-*)

Section X-X

Ø .44 (11) mounting hole (2PL)

body stiffener (omit where "B" is less than 30)

optional panel

Note: * = 4.50 if "A" is 24 or less * = 5.50 if "A" is 30 or more
** = 5.00 if "A" is 24 or less ** = 7.25 if "A" is 30 or more.

Notes: Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

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Type 1 Medium Panel Enclosures
Catalog Number

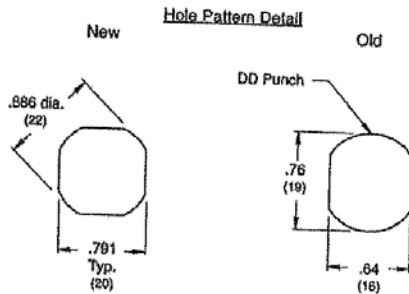| Enclosure Catalog Number	Enclosure Size Height x Width x Depth A x B x C in.	mm	Gauge	Panel Catalog Number Solid	Perforated	Panel Size Height x Width in.	mm
1612-1	16.00x12.00x6.62	406x305x168	16	AW1612-1P	AW1612-1PP	13.00x10.50	330x267
1616-1	16.00x16.00x6.62	406x406x168	16	AW1616-1P	AW1616-1PP	13.00x14.50	330x368
1620-1	16.00x20.00x6.62	406x508x168	16	AW1620-1P	AW1620-1PP	13.00x18.50	330x470
2016-1	20.00x16.00x6.62	508x406x168	16	AW2016-1P	AW2016-1PP	17.00x14.50	432x368
2020-1	20.00x20.00x6.62	508x508x168	14	AW2020-1P	AW2020-1PP	17.00x18.50	432x470
2416-1	24.00x16.00x6.62	610x406x168	14	AW2416-1P	AW2416-1PP	21.00x14.50	533x368
2420-1	24.00x20.00x6.62	610x508x168	14	AW2420-1P	AW2420-1PP	21.00x18.50	533x470
2424-1	24.00x24.00x6.62	610x610x168	14	AW2424-1P	AW2424-1PP	21.00x22.50	533x572
3020-1	30.00x20.00x6.62	762x508x168	14	AW3020-1P	AW3020-1PP	26.00x18.50	660x470
3024-1	30.00x24.00x6.62	762x610x168	14	AW3024-1P	AW3024-1PP	26.00x22.50	660x572
3624-1	36.00x24.00x6.62	914x610x168	14	AW3624-1P	AW3624-1PP	32.00x22.50	813x572
3630-1	36.00x30.00x6.62	914x762x168	14	AW3630-1P	AW3630-1PP	32.00x28.50	813x724
1612-1	16.00x12.00x8.62	406x305x219	16	AW1612-1P	AW1612-1PP	13.00x10.50	330x267
2016-1	20.00x16.00x8.62	508x406x219	16	AW2016-1P	AW2016-1PP	17.00x14.50	432x368
2020-1	20.00x20.00x8.62	508x508x219	14	AW2020-1P	AW2020-1PP	17.00x18.50	432x470
2024-1	20.00x24.00x8.62	508x610x219	14	AW2024-1P	AW2024-1PP	17.00x22.50	432x572
2420-1	24.00x20.00x8.62	610x508x219	14	AW2420-1P	AW2420-1PP	21.00x18.50	533x470
2424-1	24.00x24.00x8.62	610x610x219	14	AW2424-1P	AW2424-1PP	21.00x22.50	533x572
3020-1	30.00x20.00x8.62	762x508x219	14	AW3020-1P	AW3020-1PP	26.00x18.50	660x470
3024-1	30.00x24.00x8.62	762x610x219	14	AW3024-1P	AW3024-1PP	26.00x22.50	660x572
3030-1	30.00x30.00x8.62	762x762x219	14	AW3030-1P	AW3030-1PP	26.00x28.50	660x724
3624-1	36.00x24.00x8.62	914x610x219	14	AW3624-1P	AW3624-1PP	32.00x22.50	813x572
3630-1	36.00x30.00x8.62	914x762x219	14	AW3630-1P	AW3630-1PP	32.00x28.50	813x724
4224-1	42.00x24.00x8.62	1067x610x219	14	AW4224-1P	AW4224-1PP	38.00x22.50	965x572
242010-1	24.00x20.00x10.62	610x508x270	14	AW2420-1P	AW2420-1PP	21.00x18.50	533x470
302410-1	30.00x24.00x10.62	762x610x270	14	AW3024-1P	AW3024-1PP	26.00x22.50	660x572
242012-1	24.00x20.00x12.62	610x508x321	14	AW2420-1P	AW2420-1PP	21.00x18.50	533x470
242412-1	24.00x24.00x12.62	610x610x321	14	AW2424-1P	AW2424-1PP	21.00x22.50	533x572
302412-1	30.00x24.00x12.62	762x610x321	14	AW3024-1P	AW3024-1PP	26.00x22.50	660x572
363012-1	36.00x30.00x12.62	914x762x321	14	AW3630-1P	AW3630-1PP	32.00x28.50	813x724

1.81
(46)

1.37
(35)

flush latch
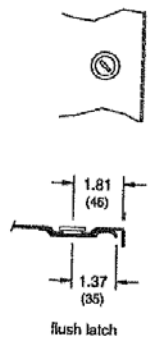
Detail

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

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Type 1 Enclosure Flush Lock	
Catalog Number	**Description**
T1EFL	New Flush lock
25245A	Old Flush lock

Flush Locks are used as a keyed locking mechanism for Type 1 small, medium and large Panel Enclosures. Mechanisms are steel with a plated finish. Due to recent design changes, choose appropriate catalog number based on hole pattern below.

Hole Pattern Detail

New   Old

DD Punch

.866 dia. (22)

.76 (19)

.791 Typ. (20)

.64 (16)

Old Flush Lock Part # 25245A
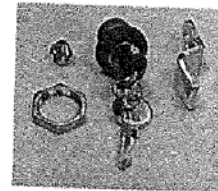
New Flush Lock Part # T1EFL

Type 1 Enclosure Security Latch Inserts	
Catalog Number	**Description**
7M1TLK	7mm triangular latch insert
7M1TSLK	7mm square latch insert
3MD1BLK	3mm double bit latch insert

Security latch inserts interchange with slotted quartertum flush latch and provide security and control access to interior of enclosure. Inserts include matching key.
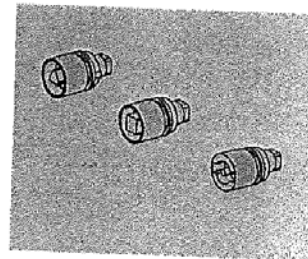
Type 1 Tel Cab Mechanism	
Catalog Number	**Description**
25092 A	Tumbler lock (single door)
25092 B	Left Hand Key Locking

Tumbler Locks are used as replacement mechanisms for Type 1 Single-Door Telephone Termination Cabinets. They are designed for cabinet doors which hinge on the right side. The low profile mechanism is excellent for surface and flush cabinet cover mounting.
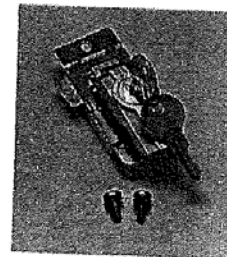
Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

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Avaya Communication Server 1000E

The foundation of your unified communications experience

Avaya Communication Server 1000E is a full-featured IP-distributed telephony communications system that delivers the benefits of network convergence and collaborative communications, while providing all your employees with access to productivity-enhancing applications from Avaya Aura ™ unified communications solution.

The Communication Server 1000E is a highly scalable communications platform that can evolve and grow with your business needs. It incorporates comprehensive resilience and security capabilities, helping ensure the protection of your network, its traffic and your users. Primarily a software-based solution configured with Avaya's Unified Communications Management tool suite, the Communication Server 1000E consists of the following three key elements:

- The Communication Server 1000E Call Server provides reliable call and connection management service. It controls the system software and is capable of supporting up to 22,500

clients per server, as well as enabling geographically redundant configurations to help ensure business continuity.

- The IP Signaling and Network Routing Servers perform important IP call control services such as registration of IP terminals and IP endpoints, IP address translation and bandwidth control. They enable the streamlining of the network dialing plan and simplify the scalability and management of Communication Server 1000 networks.

- Enterprise Media Gateways support a complete range of analog and digital line and trunk interfaces across LAN or WAN infrastructures.

Supporting both Standard Availability (SA) and High Availability (HA) options, the Communication Server 1000E comes in multiple deployment configurations. These can include co-resident call and signaling server applications, TDM-only options for SA configurations, or integrated hardware to run call server and IP Signaling and Network Routing applications. Alternatively, you can choose commercial off the shelf (COTS) servers for running the IP Signaling and Network Routing applications with full support of all features and capabilities, including multiple redundancy configurations.

The Communication Server 1000E supports a broad portfolio of business-critical applications including unified messaging, web-based contact center applications, SIP-based multimedia services, integration with Microsoft Office Communications Server 2007 and over 750 world-class business telephony features designed to keep your enterprise competitive.

The Communication Server 1000E delivers the capabilities, feature richness and flexibility that enable a simple evolutionary path to the award-winning Avaya Aura ™ unified communications solution.

FACT SHEET   ▶ 1

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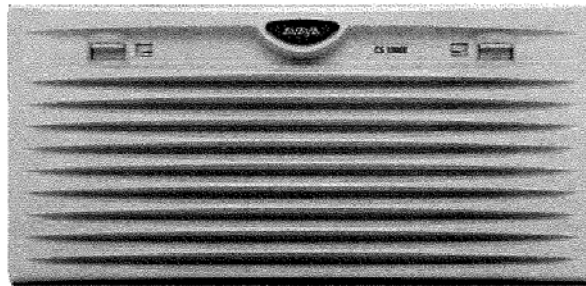
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Communication Server 1000E Technical Specs

Call Server	
Call Server Capacity	22,500 IP users
Operating System	VxWorks V5.5.19, Red Hat Linux 5.1 for Co-Resident System
CPU	CPPM with Intel Pentium M738
Memory	2GB DDR RAM
Mass Storage Media	40 GB Fixed Media Disk
Busy Hour Call Completions*	CPP IV 750,000, CPPM 950,000 * BHCC ratings are nominal only; actual capacity is dependent on site configuration and application features.
Maximum Number of IP Phones	22,500 IP / 11,250 SIP
Maximum Number of Digital Phones	5,000
Maximum Number of Analog Phones	5,000
Call Control APIs Supported	TAPI, SIP TR-87
Software Features	Over 750 features including: Six Party Conference (62 Party Conference with Integrated Conference Bridge), Attendant Recall, Automatic Busy Redial, Call Duration Display Timer, Call Forward (nine types), Call Join, Call Park, Call Transfer, Call Waiting, Calling Line Identification, Calling Party Name Display, Charge Account Codes, Controlled Class of Service, DID Route Control, Flash, Hold, Hunting (six types), IP Call Recording, Malicious Call Trace, NAT Traversal, Network Virtual Office Login, Override Position Busy, Personal Directory, Radial List and Callers List, Remote Message Waiting, Ring Again, Trunk Route Optimization — Call Modification, Mobile extension, SIP Hospitality, Dynamic Call Redirect, Bandwidth Management, Active Call Fail-Over, Alternate Call Routing, PVQM, Automatic QoS.

	Signaling Server	CPPM	DELL R300	IBM x3350
Hardware	CPU	Intel Pentium M738	Intel Quad Core CPU 2.5GHz	Intel Core 2 Quad CPU 2.66GHz
	Memory	2 GB DDR Dram	4GB DDR RAM	4GB DDR RAM
	Mass Storage Media	40GB Fixed Media Disk	250GB GB HDU	250 GB HDU
	Operating System	Linux RedHat V5.1	Linux RedHat V5.1	Linux RedHat V5.1
Software (limits per signaling server)	IP Sets	5,000	5,000	5,000
	H323 Virtual Trunks	1,200	1,200	1,200
	SIP Virtual Trunks	1,800	1,800	1,800
	Personal Directory, Recall List, Call List	22,500	22,500	22,500
	H323 call per hr	40,000	80,000	80,000
	SIP calls per hr	40,000	80,000	80,000
	NRS calls per hr	100,000	200,000	300,000
	Endpoints per NRS	5,000	5,000	5,000
	Routing entries per NRS	20,000	20,000	20,000
	SIP line gateway / SIP Clients	1,800	1,800	1,800

Trunking	
Supported Trunks	• IP: IP Virtual Trunks using IP Peer Networking over H.323 or SIP • Digital: DTI, ISDN-PRI, ISDN-BRI • Analog: Loop and Ground Start CO, FX, WATS, two or four wire E&M, four wire DX, DID, TIE, RAN Paging
Network Signaling Protocols	H.323 v4, MCDN, SIP, LDAP, QSig, QSS, in band and DPNSS

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Phones & Clients	
IP Phones & Clients	• 1100 Series IP Deskphones, 1200 Series IP Deskphones, 2000 Series IP Deskphones • 1535 IP Deskphone • 2033 IP Conference Phone • 3456 UC Client, 2050 IP Softphone for Windows PC and 2050 IP Softphone for Windows Mobile • 2200 Series WLAN Handsets, 6100 Series WLAN Handsets • IP Phone/Client Accessories: 1100 Series Expansion Module (18-button); 2000 Series Expansion Module (24-button); 1200 Series Expansion Modules (12/18Key); Enhanced USB Desktop Adapter and Mobile USB Headset Adapter for 2050 IP Softphone
IP Phone Powering Options	802.3af Power over Ethernet, Power over LAN Hub and local AC adapter
Digital Phones	3900 Series Digital Deskphones, 4000 series DECT Handsets
Attendant Services Compatibility	2250 Attendant Console; PC Console Interface Unit (PCCIU) (The PCCIU supports PC-based Attendant software from various third-parties)

Applications	
IP Remote Services	• Survivable Remote Gateway 50: supports 5-80 survivable IP users • Survivable Remote Gateway 200/400: supports 5-90 survivable IP users • Enterprise Media Gateway 1000B: supports up to 400 survivable IP users in addition to Digital and Analog users. • Survivable Media Gateway: supports up to 22,500 IP users • Remote Gateway 9150: supports up to 32 survivable Digital Telephones • Remote Gateway 9115: supports one survivable Digital Telephone
Unified Messaging	• CallPilot 202i IPE: 32 channel/32 MPU capacity, in-skin server • CallPilot 600r: 96 channel/96 MPU capacity, rack mount server • CallPilot 1005r: 192 channel/288 MPU capacity, rack mount server, available redundancy with automatic failover • Unified Messaging 2000: A carrier grade unified messaging application designed to meet the needs of large enterprise customers (25,000 - >100,000 users) • Microsoft Exchange 2007 Unified Messaging
Contact Center	• Contact Center – Express: Can be configured for up to 300 agents with up to 100 actively logged on. Busy-hour capacity is 5,000 CPH (configuration dependent). Single server solution, Windows 2003 Enterprise Edition, nodal only. • Contact Center 7.0: Single CS 1000: 3 applications, each configurable up to 10,000 agents with up to 3,350 actively logged on (configuration dependent). Busy-hour capacity: 66,000 calls per hour per application (configuration dependent). Architecture: Attached Server, Windows 2003 Standard or Enterprise Edition. Networked CS 1000's 30 applications configurable to 300,000 agents with up to 100,000 actively logged on (configuration dependent).
Interactive Voice Response	• Media Processing Server 500: Scalable up to eight T1/E1 spans (192/240 ports) in a single system. Multiple systems can be networked together for additional capacity. • Media Processing Server 1000: A single MPS 1000 system starts at 4 digital spans and grows to 384 spans. 96 - 9216 T1 channels or 120 -11520 E1 channels. 120 - 11520 VoIP channels. Mixed T1/VoIP or E1/VoIP configuration. An extremely compact solution, the MPS 1000 requires approximately 1/8 the floor space of a similarly configured VPS/is system. A system supporting up to 1536 T1 or 1920 E1 channels can be deployed in a single cabinet.
Conferencing	• Multimedia Conferencing: A standalone SIP-based reservation-less audio/video conferencing solution for the CS 1000 and also interoperable with Microsoft OCS. Operates on COTS hardware. Single conference capacity to 300 participants, single server capacity to 800 ports and cluster capacity to 5,600 ports. Audio conference recording supported.

[◄◄] [◄] [►] 3

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Applications	
Multimedia	• The Multimedia Communication Server (MCS) 5100 transforms the way users communicate by providing multimedia and collaborative applications that enhance communications, making users more productive and enabling the virtual enterprise. It will support 50 to 20,000 users and is available in redundant or non-redundant configurations. The core system supports IP telephony, call logs (in/out), directories, click to call, instant messaging, rich dynamic presence, advanced call and IM screening and routing, video telephony, file transfer, whiteboarding, web push, and web co-browsing. Supports multiple media application servers (MAS) for optional applications, including Ad hoc and Meet Me Conferencing, Video Conferencing, web collaboration (application sharing), IM Chat, recorded announcements and music on hold. • The Converged Office solution for Communication Server 1000 integrates Avaya business-grade telephony with Microsoft Office Communications Server 2007 desktop collaboration and communication systems in an open-SIP, standards-based environment. This robust, enterprise-class architecture provides a winning solution that goes beyond the complexity of competitive middleware offerings
IP Telephony Applications	• The Application Gateway 2000 delivers practical, converged voice and data applications on IP phones that enable organizations to benefit more fully from IP telephony. The prepackaged, easy-to-learn, easy-to-use Voice Office applications help increase productivity and enhance organizational communications. Voice Office includes Express Directory, Zone Paging, and Broadcast Alerts. The Guest Services Application package allows graphically based custom 9-button display and promotional advertisements on screens of the IP Phone 2007 in guest rooms. Access Services also enables custom development and delivery of content to the 2007 IP Deskphone. • The Application Gateway 2000: supports up to 500 IP Phones, up to 4 gateways can be networked, increasing capacity to 2,000 IP Phones on a single CS 1000. One Application Gateway 2000 can also support multiple CS 1000 systems.
Integrated Applications	• Integrated Conference Bridge: Capacity per card – up to ten simultaneous three-party conference calls, a conference with up to 32 participants or any combination thereof. 24 and 32 port configurations and the dual card 42, 50 and 62 port configurations supported. Ten languages supported. Supports conference scheduling through Microsoft Outlook. Conferences can be scheduled or ad hoc (reservationless). • Integrated Recorded Announcement: Small (five channel), Medium (six channel) and Large (ten Channel) configurations available supporting up to 20, 36 or 40 concurrent calls per card. With RAN Broadcast software option, number of concurrent calls equals 136, 152 and 242 per card, respectively. Eight minutes of voice or music memory standard; expandable up to five hours. Netscape Communicator 3.0 or later and Microsoft Internet Explorer 3.0 or later are supported. • Integrated Call Director: Extensive find me/follow me capabilities for one number dialing. Remote dial access. Eight port/50 user expandable to 100 users, 16 port/100 user expandable to 150 users, 24 port/150 user expandable to 200 users and 32 port/200 user expandable to 300 users are the configurations available. Seventeen languages supported. Netscape Communicator 4.01 or later and Microsoft Internet Explorer 4.5 or later are supported. • Hospitality Voice Services: Two, four and eight port configurations available. Two port configuration supports up to 200 rooms; Four port up to 500 rooms; Eight port up to 1000 rooms. Maximum of one IVS card per system. Netscape Communicator 4.01 or later and Microsoft Internet Explorer 4.5 or later are supported. • Integrated Call Assistant: 5 to 32 port configurations available. Up to 32 ports supported on CS 1000 Release 4.0 or later. Netscape Communicator 4.01 or later and Microsoft Internet Explorer 4.5 or later are supported. • Flash Card Option: Maximum of 16 voice greetings and menus, eight call screening tables, 1000 database name capacity, 14 predefined menus. American English supported. • Hard Drive Option: Maximum of 32 voice greetings and menus, 32 call screening tables, 10,000 database name capacity, 22 predefined menus, 3000 personal verification recordings. Eight languages supported.

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Applications	
Wireless & Mobility	Hardware: 2200 Series WLAN Handsets, 6100 Series WLAN Handsets
	• 2245 WLAN IP Telephony Manager
	• 2246 WLAN Application Gateway: optional SVP WLAN Infrastructure
	• Media Card (or software upgraded IP Line card) and Signaling Server (same requirements as for 2004 IP Deskphone)
	• 128 users per IP line card; up to 5,000 IP users per Signaling Server
	• Software: Minimum release of CS 1000 software supported is 4.0
	Hardware: 4000 Series DECT Handsets
	• DMC8 and DMC8-E cards, 4600, 4610 and 4610E Base Stations.
	• Software: All CS1000 Releases supported.
	Hardware: 4000 Series DECT Handsets (SIP)
	• 4710 and 4710E DECT Access Points
	• Software: Minimum release of CS 1000 software supported is 5.5.
	• 3100 Mobile Communicator: Extends CS 1000 telephony features to mobile smart phones. Two user-side deployment options: a 3100 Mobile Communicator Client that supports a range of popular smartphones (cellular and W-Fi) including RIM/BlackBerry, Nokia/Symbian and Microsoft Windows Mobile platforms, and a 'clientless' 3100 Mobile Communicator WebUI that can be accessed by any browser-equipped mobile device (phone or PC) including Apple iPhone and Palm Pre.
Management	• Unified Communications Management Solution (UCM) can support up to 1000 elements in a CS 1000 security domain. Supported elements include CS 1000 Element Manager (one per CS 1000), NRS Manager and Subscriber Manager 2.0 (optional) and are accessible using Internet Explorer web browser (Release 6.0 or above). Web Services API (SOAP over HTTP) also available from the UCM management framework. Subscriber Manager 2.0 is deployed as a plug-in is a single scalable management application for configuration and provisioning of subscriber services (i.e. CS 1000 phones). It provides provisioning workflow and navigation by subscribers rather than by boxes. Subscriber Manager 2.0 leverages templates within CS 1000 Element Manager Release 6.0 for account (i.e. phone) provisioning. Subscriber Manager currently supports 200,000 subscribers and 350,000 accounts. Required component for managing the CS 1000 Release 6.0 Unicode Name Directory feature.
	• Communication Server 1000 Telephony Manager 4.0: Supported with Windows 2000/2003 Server, Windows XP Professional and Windows 2000/2003 professional and Vista clients; Web management support with MS Internet Explorer 6.x and later; HP OpenView and ENMS integration; supports up to 128,000 sets; up to 2.5 million call records per costing configuration; alarm queue can hold up to 1,360 traps (3.7 hours worth of alarms). LDAP integration with Microsoft Exchange Server 2000, 2003 and 2007, Microsoft Active Directory for Windows 2000 & 2003, and Sun Java System Directory Server.

System Capabilities	
Standards and Protocols Supported	802.1d, 802.1p, 801.1Q, 802.3, 802.3af, 802.11a/b/g, DCL, DHCP, DiffServ, DNS, FAX, FAX Group 3/4, G.711, G.726, G.728, G.729, G.729a, H.225, H.245, H.323v4, IP Precedence, LDAP, SNMP, NAT, NTP, RSVP, RTP, RTCP, SIP, SSH, T.120, T37, TCP/IP, Q.931, UDP/IP, VPIM, WRED and the following RFCs 2401, 2402, 2406, 2408, 2409, 2412, 2617, 2833, 2976, 3261, 3262, 3263, 3264, 3265, 3311, 3323, 3325, 3326 and 3515 with MCS 5100 Multimedia Communication Server, 3602, 3686, 3711.
Mechanical Standards	Call Servers and Media Gateways (including Expansion, PRI and MG1010) comply with Bellcore GR-63-CORE. Signaling Server complies with Mil Std 810E Method 516.

[◀|] [◀] [▶|] 5

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System Redundancy and Survivability Options	
Signaling Server	• Unistim TPS - Load balanced with active failover
	• Network Redirect - Primary, Secondary, Failsafe Automatic Failover
	• SIP Proxy - Primary, Alternate - Active/Active Failover
	• SIP and H.323 Gateways - Automatic Trunk Failover
Call Server	
• Call Processor(s)	Optionally Redundant
• Geographic Redundancy	Yes
• Campus Redundancy	Yes
Media Gateways	
• Survivable Media Gateway	Survivable Call Server
• MG 1000E	Dual Homing
• MG 1000E PRI	Dual Homing
• MG 1000B (Branch)	Survivable Call Server
• MG 1010	Survivable Call Server with redundant power and cooling
• MG XPEC (Integrated IPE Module)	Dual Homing

Environmental	
Operating Environment	COTS Signaling Server:
	DELL R300
	Operating Ambient Temperature 50° to 95° F (10° to 35° C), Operating Altitude to 10,000 ft (3,050m), Operating Relative Humidity 20% to 80% (non-condensing - tw max 85° F (29°C))
	IBM x3350
	Operating Temperature 50° to 95° F (10° to 35° C) up to 3000ft (914m); Operating Temperature 50° to 90° F (10° to 32° C) up to 7000ft (2,133m); Operating Relative Humidity 20% to 90% (non-condensing)
	Call Server and Media Gateway, Media Gateway Expansion and PRI
	Ambient Temperature: Recommended: 15-30 degrees Celsius (59-86 degreesFahrenheit) – Absolute 0-45 degrees Celsius (32-113 degrees Fahrenheit) – Relative Humidity (%) without condensation: Recommended: 20%-55% – Absolute: 10%-95%
	MG 1010
	Ambient Temperature: Recommended: 0-45 degrees Celsius (32-113Fahrenheit) for a minimum of 2 hours. The system shall operate in an ambient temperature of 40°C with a relative humidity of 95% (non-condensing) for a minimum of 3 days.

6 ⏮ ◀ ▶

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

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Environmental		
Input Voltage	COTS Signaling Server: • AC: 110-240V,50/60 Hz, auto-sensing • DC: N/A	
	Call Server: • AC: 110-240V,50/60 Hz • DC: N/A	

	Media Gateway:
	• (MG 1000 and Expansion)
	  AC: 110-240V,50/60 Hz
	  DC: -48V
	• (MG 1000E PRI)
	  AC: 110-240V,50/60 Hz
	  DC: N/A
	• (MG 1010)
	  AC: 110-240V,50/60 Hz
	  DC: N/A	

Power Consumption	COTS Signaling Server: DELL R300 • Watts: 400 • Heat Output: Maximum 1365 BTU/hr	
	IBM x3350 • Maximum Watts: 400 • Heat output: Minimum 396 Btu/hr (120 watts), Maximum: 1365 Btu/hr (400 watts)	
	Call Server: • Watts: 300 • Heat (BTU/hr): 1024	
	Media Gateway: MG1000 and Expansion: • Watts: 300 • Heat (BTU/hr): 1024 MG1000E PRI • Watts: 80 • Heat (BTU/hr): 342 MG1010 • Watts: 630 maximum • Heat (BTU/hr): 2150 maximum	

[◄◄] [◄] [►] 7

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
and public address system; telephone system; and fire detection and alarm system

Environmental

Dimensions and Weights	CDTS Signaling Server: DELL R300 19" rack mount - Width 42.62 cm (16.78 in) • Height: (1U) 4.32 cm (1.70 in) • Depth 66.04 cm (26 in) • Weight (maximum) 13.45 kg (29.7 lb)	IBM x3350 • 19" rack mount - Width: 44.0 cm (17.3 in) • Height: (1U) - 4.3 cm (1.7 in) • Depth: 71.2 cm (28 in) • Maximum weight: 15.6 kg (34.5 lb)
	Call Server: • Width: 17.4 in. (442 mm) • Depth: 15.5 in. (392 mm) • Height: 5.2 in. (132 mm) • 19 Rack Mounting: 3U • Weight: 29 lb. (13.2 kg)	MG1000E PRI: • Width: 17.5 in. (445 mm) • Depth: 11.8 in. (300 mm) • Height: 3.5 in. (88 mm) • 19 Rack Mounting: 2U • Weight: 24 lb. (10.9 kg.)
	Media Gateway: • MG 1000 and Expansion • Width: 17.2 in. (437 mm) • Depth: 12.8 in. (325 mm) • Height: 8.4 in. (213 mm) • 19 Rack Mounting: 5U • Weight: 30 lb. (13.6 kg.)	MG1010 • Width: 17.5 in. (445 mm) • Depth: 21 in. (533 mm) • Height: 15.75 in. (400 mm) • 19 Rack Mounting: 9U • Weight: 55 lb. (24.9 kg.)

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

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AVAYA

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Avaya B5800 Branch Gateway

A flexible, cost effective collaborative branch solution with communications survivability for enterprise branch environments.

Avaya B5800 Branch Gateway is a single-platform solution with multiple deployment options that enables seamless, user-centric access to Avaya Aura® unified communications, applications and services.

Avaya B5800 Branch Gateway brings the latest Unified Communications & Collaboration (UCC) applications to all users, including Avaya Aura® Messaging, Avaya Aura® Conferencing, Avaya Aura® Presence services and much more.

Ideal for customers wanting applications deployed in customer data centers and/or in the branch itself, Avaya B5800 Branch Gateway enables the branch to cost effectively deliver basic telephony to robust collaboration without complex infrastructure and administration.

Avaya B5800 Branch Gateway combines multiple deployment options (distributed, centralized or mixed) with the ability to adapt specific features and applications to the needs of individual employees in each branch location.

Avaya B5800 Branch Gateway maximizes existing investments by supporting:

- A wide range of branch clients (H.323, analog, digital, SIP and mobile).

- Standard SIP, Key system, and PBX features.

- A variety of trunking options including SIP, Analog, and T1/PRI.

- In addition, Avaya Aura acts as a multi-vendor aggregator enabling companies to deploy applications not only across Avaya gateways and PBXs but across third party as well.

Avaya B5800 Branch Gateway provides a cost-effective enhanced survivability configuration, while providing a migration path to full survivability.

UCC, Network Management & Business Continuity

Voice Messaging	Up to 6 ports & 15 hours storage Integration to Avaya Modular Messaging Visual Voice Mail Context sensitive keys Simple Announcements Sub-menus within Automated Attendant	Message Forwarding with Pre-Pending Call-Back Sender (Caller ID required) Fast Forward, Rewind & Skip Personal Attendant Fax Tone Detection & Routing Voicemail to Email presentation
Conferencing	Up to 128 conference channels (maximum 64 parties per conference); quick set up of conference calls on the fly or schedule them in advance and notify participants automatically	
Mobility	Supports Rich UC mobility across enterprise Remote Call control: transfer, conference, hold, etc.	One number reachability Simultaneous call ringing
Centralized Network Management	Configuration backup and restore Centralized software management	Single view of entire B5800 network Template-based configuration
Enhanced Survivability Features	Local PSTN or SIP trunks Embedded or centralized Modular Messaging Conferencing Caller ID	Attended & Unattended call transfer Call hold and consultative hold Music on Hold Local Class of Restrictions (COR)

FACT SHEET

Long Beach Unified School District Single Source Resolution for
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Technical Specifications and Scalability

Dimensions	17.5 W x 2.9 H x 14.4" D (445 x 73 x 365mm); Min. clearance front/back: 3" (75mm)
Weight	7.0 lbs/3.2kg
Operating Temperature	32° to 104°F (0° to +40°C). 95% relative humidity, non-condensing
Power Supply	100-240V AC, 50/60Hz, 81-115VA, 2.5A maximum
Endpoints (H323, SIP, analog, digital)	384
PRI trunk channels	240
Analog trunks	16
Voice compression channels	148

Base, Expansion and Trunk Cards*

Digital Station (DS8)	Connectivity for 8 Avaya digital stations
Voice Compression Module (VCM) Card	32 or 64 channel options
Analog Phone 2 Card & Phone 8 Card	2 or 8 extension ports
4-Port Expansion Card	Connectors for 4 additional expansion modules
Combo Card	6 digital ext., 2 analog ext.; trunk ports (4 analog or 4 BRI); 10 VCM channels.
Analog Trunk Module	16 analog trunks
Digital Station Module	16 (DS16) or 30 (DS30) stations
Phone Expansion Module	Connectivity for 16 or 30 analog extensions
Analog Trunk Card	Provides 4 analog loop-start trunks; also provides one analog V.32 modem
BRI Trunk Card	Supports 2 (4 channel) or 4 (8 channel) BRI trunk connections.
PRI Trunk Card	1 or 2 trunks/ T1, E1, and E1R2.

*Supports four base cards, 12 expansion cards and four trunk cards

Learn more

Providing a flexible, cost-effective solution for communications and collaboration across branch environments is just one of the ways that Avaya meets the needs of today's enterprises. To learn more, contact your Avaya Account Manager or Avaya Authorized Partner. Or, visit us online at www.avaya.com .

About Avaya

Avaya is a global leader in business communications systems. The company provides unified communications, contact centers, data solutions and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com .

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AVAYA

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Avaya 1220 IP Deskphone

## Ideal for the moderate call activity of office workers

The 1220 IP Deskphone is a multi-line, intermediate-level desktop phone in the exciting 1200 Series IP Deskphones. Originally designed and optimized for small and medium-sized businesses, the 1200 Series IP deskphones are now extended to enterprises, offering a competitive feature set with contemporary styling. The 1220 IP Deskphone is ideally positioned for employees with moderate communication needs.

Key features and benefits include:

- Multi-line IP Deskphone supports up to four line/programmable feature keys, eight fixed telephony keys, four context-sensitive soft keys and six shortcut/feature keys.

- 5 lines x 25 characters display with anti-glare screen combined with a flexible two-position adjustable footstand optimizes viewing under varied lighting conditions.

- Four-way navigation cluster with Enter key maximizes user choice and flexibility in navigation.

Avaya 1220 IP Deskphone
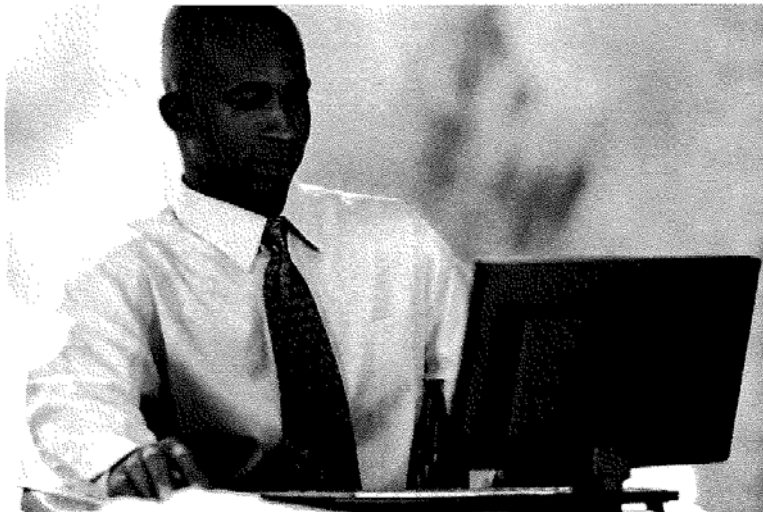
- Superior audio quality leverages some of the latest technologies to ensure crystal-clear conversations.

- Integrated headset and speakerphone — supports a high-quality, two-way speakerphone (handsfree) and other optional headsets for executives or multi-tasking workers.

- Simplified communications — the most commonly used Avaya Business Communications Manager (BCM) and Avaya Communication Server 1000 features come preprogrammed on all 1200 Series IP Deskphones. You can also customize the sets from hundreds of BCM and Communication Server 1000 telephony features.

- Integrated 10/100 Base-T Ethernet switch

PRODUCT BRIEF   1

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- with LAN and PC ports reduces costs, enabling a single cable drop to support both the phone and a collocated PC.
- Supports 802.3af standards-based PoE or local AC power via power adapter.
- Compatible with optional Key Expansion

Special features (SIP software only)

Presence
- Supports Presence Notification on phone display
- User Presence Selection

Instant Messaging
- Secure Instant Messaging from phone display
- Message Waiting indication of Instant Messages via blue LED illumination
- On/Off automatic pop-up notification of Instant Messages
- Instant Message log access via Applications Key
- Icons for read, unread, replied to Instant Messages
- Special character support for meaningful text entry

Security
- TLS secure signaling
- Certificates
- SRTP media security

Other
- Graphical status for calls (calls missed, number for each user)
- Incoming and Outgoing Privacy Settings
- Selectable ringtones (up to five) via .wav file storable on deskphone (administrator provisioned)
- Eighteen localized languages supported (up to five storable on deskphone at one time)
- Programmable Feature Keys
- Support for 1200 Series Expansion module
- Local & Network Address Book

Modules (12-key LCD-based or 18-key LED-based).

Specifications
Physical specifications

Platform support
- Avaya Communication Server 1000
- Avaya Business Communications Manager 50 and Business Communications Manager 450

Display
- Monochrome Film Super Twist Nematic (FSTN) Liquid Crystal Display, 5 line x 25 character with anti-glare coating

IP Phone footstand adjustments
- Desktop viewing adjustments: 25 and 55 degree angles
- Wall mount angle: minus 5 degrees

Fixed keys and soft keys
- Fourteen fixed keys (Handsfree, Headset, Volume Up and Down, Mute, Hold, Goodbye, Applications, Messages, Redial, Directory, Conference, Services and Quit)
- Four context-sensitive soft-keys for easy-to-use navigation[1]

Navigation cluster
- Four-way navigation cluster (left, right, up, down arrows) plus Enter key

Expansion Module
- Supports Expansion Modules for 1200 Series IP Deskphones[2] (12-key LCD-based or 18-key LEDbased[3])

User Selectable Ringtones

Headset support
- Supports third-party wired headsets

Languages supported
- Languages are platform and protocol dependent. Consult platform documentation of choice for further details.

Connectivity/data rates
- Integrated 10/100 Ethernet Switch

- Two 10/100 Ethernet ports for network connection and collocated PC connection
- Auto speed and duplex
- Manually configurable speed and duplex when used with Ethernet switches that do not auto-sense
- Auto MDIX on network port
- Ability to manually disable PC port

Dimensions
- Unpackaged: (H x W x D) 205 x 198 x 190 mm (8.1 x 7.8 x 7.5 inches) approximate, in desktop 55-degree position
- Packaged: (H x W x D) 254 x 260 x 111 mm (10 x 10.25 x 4.75 inches), approximate

Weight
- Packaged: 2.9 lb / 1.32 kg
- Unpackaged: 1.9 lb / .86 kg

Power
- Power over Ethernet: Supports IEEE 802.3af Power over Ethernet; Power Class 2
- AC power: Use Nortel approved adapter; 48VDC, 0.52A
- Power dissipation: 3.4 watts normal, 6.5 watts maximum

Protocols
- Avaya Communication Protocol

SIP Protocols
- **RFC2327** — SDP: Session Description Protocol
- **RFC2617** — HTTP Authentication: Basic and Digest Access Authentication
- **RFC2976** — The SIP INFO Method
- **RFC3108** — Conventions for the use of Session Description Protocol: ATM Bearer Connections
- **RFC3204** — MIME Media Types for ISUP and QSIG Objects
- **RFC3261** — Session Initiation Protocol (SIP)

2

Long Beach Unified School District Single Source Resolution for
classroom audiovisual management system; intrusion detection system; secondary indicating clocks
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- **RFC3262** — Reliability of Provisional Responses in the Session Initiation Protocol
- **RFC3263** — Session Initiation Protocol (SIP): Locating SIP Servers
- **RFC3264** — An Offer/Answer Model with Session Initiation Protocol (SIP)
- **RFC3265** — Session Initiation Protocol: Specific Event Notification
- **RFC3311** — Session Initiation Protocol (SIP) UPDATE Method
- **RFC3313** — Private Session Initiation Protocol (SIP) Extensions for Media Authorization.
- **RFC3323** — A Privacy Mechanism for the Session Initiation Protocol
- **RFC3325** — Private Extensions to the Session Initiation Protocol for Asserted Identity within Trusted Networks
- **RFC3329** — Security Mechanism Agreement for the Session Initiation Protocol
- **RFC3361** — Dynamic Configuration Host Protocol (DHCP-for IPV4) Option for Session Initiation Protocol Servers
- **RFC3420** — Internet Media Type Message/sipfrag
- **RFC3428** — Session Initiation Protocol Extension for Instant Messaging
- **RFC3489** — Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators
- **RFC3515** — The Session Initiation Protocol Refer Method
- **RFC3550** — RTP: A Transport Protocol for Real-Time Applications
- **RFC3551** — RTP Profile for Audio and Video Conferences with Minimal Control
- **RFC3605** — Real-Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)

Audio Quality of Service
- G.711 a- and µ-g-law, G.723.1 and G.729a and Annex B
- 802.1p/Q, DiffServ and VLAN tagging of telephony port traffic
- Supports echo cancellation and silence suppression

Operating temperature
- +5°C to 40°C/40°F to 104°

Relative humidity
- 5% to 95% (non-condensing)

Storage temperature
- -40°C to 70°C/-40°F to 158°F

Administration and security
- Static and Full Dynamic Host Control Protocol (DHCP) address assignment (Full DHCP factory default)
- 802.1ab Link Layer Discovery Protocol (LLDP) for network auto-discovery and inventory management
- 802.1x and Extensible Authentication Protocol (EAPMD5) for network authentication and access control
- Secure signaling using standards-based DTLS⁴
- Media path encryption with RFC 3711-compliant Secure Real-time Protocol (SRTP) pre-shared key and public key infrastructure⁵
- Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics

Regulatory and safety compliance
EMC
- United States:
  FCC 47 CFR Part 15 Class B
- Canada: ICES-003 Class B
- Australia/New Zealand: CISPR 22
- European community:
  – EN55022 Class B
  – EN 55024
  – EN 61000-3-2
  – EN 61000-3-3
- Japan: VCCI
- Korea MIC: KN22 and KN24

Safety
- United States: UL 60950-1
- Canada: CSA 60950-1-03
- Australia/New Zealand:
  AS/NZS 60950.1:2003
- European Community: EN 60950-1+A11
- International: IEC 60950-1
- Mexico: NOM approvals

Other
- FCC Part 68 HAC
- IC CS-03 HAC
- Australia AS/ACIF 004
- New Zealand PTC 220
- Complies with the essential requirements and other relevant provisions of Directive 1999/5/EC10
- Complies with Reduction of Hazardous Substances (RoHS) – (6 of 6) as part of European Union Environmental Directive
- American Disabilities Act (ADA) compliant dialpad

¹ Context-sensitive soft keys are Avaya Communication Server/minimum release dependent.

² Number of supported modules is communication server dependent.

³ 18-key LED-based only supported on BCM platform.

⁴ DTLS is supported by CS1000 Rls 6.0, and requires a DTLS patch. MCS 5100 uses USEC but supports it natively on the IPCM.

⁵ Public Key Infrastructure is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for support details.

Learn More

To learn more about Avaya solutions and products contact your Avaya Account Manager or Avaya Authorized Partner or visit us at: www.avaya.com.

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Long Beach Unified School District Single Source Resolution for
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and public address system; telephone system; and fire detection and alarm system

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AVAYA

Avaya 1140E IP Deskphone

Professional-level IP Deskphone supports a new dimension in desktop communications features and application presentation.

The award-winning Avaya 1140E IP Deskphone with Gigabit Ethernet brings a new dimension in communication features and capabilities to the professional IP Deskphone. Ideally suited for managers and knowledge workers, the multi-line Avaya 1140E IP Deskphone supports standards-based Session Initiation Protocol (SIP), delivering choice to customers in deployment options with support on Avaya or third-party Communication Servers. The 1140E IP Deskphone also enables presentation of converged voice and data applications, leveraging its integrated high-resolution, graphical eight-level grayscale pixel-based display. Application navigation is flexible and powerful with the 1140E IP Deskphone's integrated USB port, supporting both standard USB mice and keyboards. Combined with rich telephony feature sets as delivered from Avaya Communication Servers, deployment of the Avaya 1140E IP Deskphone enhances personal productivity with delivery of a superior user experience for both today's and tomorrow's communications needs.

Key Features and Customer Benefits

- Multi-line IP Deskphone supports up to 12 line/programmable feature keys[1], 14 fixed keys and four context sensitive soft keys[2]

- High-resolution, fully-backlit, graphical, eight-level grayscale, 240 x 160 pixel display with anti-glare screen, combined with a flexible five-position adjustable footstand, optimizes viewing in varied lighting conditions

- Advanced collaborative communications support with graphical presence notification and secure instant messaging (SIP firmware only)[3]

- Four-way navigation cluster with Enter key provides easy navigation when using features

- Integrated USB port powers standard USB mice and keyboards, providing input and navigation options for application interaction and simpler menu selection

- Integrated Bluetooth® 1.2 audio gateway supports Bluetooth® headsets, boosting productivity with greater freedom at the desktop

- Integrated IEEE10/100/1000 Base-T Ethernet switch with LAN and PC ports reduces costs, enabling a single cable drop to support both the phone and a collocated PC

Avaya 1140E IP Deskphone

- Supports Gigabit Ethernet, positioning the phone's internal switch to accommodate growing multimedia intensive PC-based applications, thus aligning with investment made in the wiring closet

- Supports 802.3af standard-based PoE or local AC power via a global power supply

- Secured communications with standards-based signaling encryption, media encryption and user-based authentication for network access control

- Supports Unicode for expanded language and complex font presentation on the IP Deskphone display[4]

- Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics[5]

- Lockable Tools Menu offers local access to configuration, diagnostic and user preference options

FACT SHEET

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- Supports converged (voice and data) applications via External Application Server APIs, to provide productivity enhancing applications and to enrich users' experience with advanced multimedia interaction

- Supports both Avaya Communication Server protocol (UNIStim) and RFC 3261 compliant Session Initiation Protocol (SIP) firmware for business telephony feature integration[6]

- Added convenience and time savings with field-upgradeable software using Trivial File Transfer Protocol (TFTP) or for sites requiring enhanced secure software upgrades: UNIStim File Transfer Protocol (UFTP)[7]

Special features (SIP software only)

Presence

- Supports Presence Notification on phone display
- User Presence Selection

Instant Messaging

- Secure Instant Messaging from phone display
- Message Waiting indication of Instant Messages via blue LED illumination
- On/Off automatic pop-up notification of Instant Messages
- Instant Message log access via Expand Key
- Icons for read, unread, replied to Instant Messages
- Special character support for meaningful text entry

Other

- Graphical status for calls (calls missed, number for each user)
- Incoming and Outgoing Privacy Settings
- Selectable ringtones (up to five) via .wav file storable on deskphone (administrator provisioned)
- Localized language support (up to five storable on deskphone at one time)

Avaya 1140E IP Deskphone positions customers to meet both today's and tomorrow's business needs

Specifications:

Platform Support

Avaya Communication Protocol
- Avaya Communication Server 1000
- Avaya Media Gateway 1000 B
- Avaya Communication Server 2100
- Avaya Business Communications Manager 50/200/400
- Avaya Survivable Remote Gateway 50/200/400
- Avaya Multimedia Communication Server 5100
- Avaya Aura™ Application Server 5300

Session Initiation Protocol
- Avaya Multimedia Communication Server 5100 Rls 3.5 and 4.0
- Avaya Communication Server 2100 Rls SE10
- Avaya Aura™ Application Server 5300 Rls 2.0
- Nortel Communication Server 1500 Rls 1.1 and later*
- Nortel Communication Server 2000 Rls SN09U and later*
- BroadSoft BroadWorks Release 14

*Note: Product Names may change with the future sale of Nortel Heritage Assets.

Display

- High-resolution, graphical, eight-level grayscale, monochrome Film Super Twist Nematic (FSTN) Liquid Crystal Display, 240 x 160 pixel, fully bitmapped, fully- backlit, anti-glare screen
- Backlit LCD display with local contrast settings enhances viewing
- Configurable backlight timer extends the quality in display experience with 5, 10, 15, 20 minute, 1 and 2 hour settings; "Sleep never" setting for 24x7 environments
- Supports Unicode for expanded language and complex font presentation on the IP Deskphone display[8]

IP Phone footstand adjustments

- Desktop viewing adjustments: 32.5, 40, 47.5 and 55 degree angles
- Wall mount angle: minus 5 degrees

Fixed keys and Soft keys

- Fourteen fixed keys (Handsfree, Headset, Volume Up and Down, Mute, Hold, Goodbye, Directory, Inbox/Message, Outbox/Shift, Quit, Copy, Services and Expand)
- Four context-sensitive soft keys for easy to use navigation[9]

Navigation cluster

- Four-way navigation cluster (left, right, up, down arrows) plus Enter key

USB port

- Single integrated USB port for standard USB mice, keyboards, keyboard emulation devices, powered hubs, USB Flash memory Devices[10]

Bluetooth® Wireless Technology

- Integrated Bluetooth® 1.2 audio gateway for Bluetooth® headset profiles
- Supports up to 10 m/33 ft. range from gateway (Bluetooth® power class 2)

Expansion Module

- Supports Expansion Module for Avaya 1100 Series IP Deskphones (18-button)[13]

Call Recording

- Supports transmission of duplicate media streams with Avaya Call Recording and Quality Monitoring (CRQM)[14]

User Selectable Ringtones

Headset support

- Supports third-party wired and wireless headsets

Languages supported

- Language support is platform and protocol dependent. Consult platform documentation of choice for further details

Administration and Security

- Static and Full Dynamic Host Control Protocol (Full DHCP factory default)
- 802.1x and Extensible Authentication Protocol (EAP-MD5) for network authentication and access control

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Long Beach Unified School District Single Source Resolution for
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Avaya 1140E IP Deskphone positions customers to meet both today's and tomorrow's business needs (continued)

Administration and Security (continued)

- Secure signaling using standards-based DTLS[13]
- Media path encryption with RFC 3711 compliant Secure Real-time Protocol (sRTP) pre-shared key and public key infrastructure[14]
- 802.1ab Link Layer Discovery Protocol for network auto-discovery and inventory management
- Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics[15]

Dimensions and Weight (approximate)

- Size (W x D x H)
  – 7.9 in x 7.4 in x 8.1 in/200mm x 188mm x 207mm — 55 degree footstand desktop configuration
  – 7.9 in x 8.7 in x 6.3 in/200mm x 191mm x 163mm — 32.5 degree footstand desktop configuration
  – 7.9 in x 8.6 in x 4.0 in/200mm x 220mm x 101mm — minus 5 degree footstand desktop Configuration
- Weight (phone, handset, and handset cord)
  – 2.47 lbs/1.12 kg

Color

- Graphite with silver metallic bezel finish

Connectivity/data rates

- Integrated 10/100/1000 Base-T Auto-Sensing Ethernet switch for shared PC access (one LAN port and one PC port) supports switching of PC traffic through IP Phone 1140E
- Manually configurable for 10 and 100 Mbps speeds when used with Ethernet Switches which do not support auto-sensing
- Minimum Category 5e cabling required for Gigabit Ethernet deployment (Category 5e cable included as standard)

Power

- Supports IEEE 802.3af Power over Ethernet
- Power dissipation: IEEE Power Class 2: 4.2 watts normal, 6.5 watts peak
- Optionally available AC global power supply (90-260 VAC, 50/60Hz global power supplydelivers 48V DC @ 520mA max)

- Global power supply also requires AC power cable (country specific standard IEC) — orderable separately

Protocols

- E.164 dialing
- SIP Protocols:
  – **RFC2327** — SDP: Session Description Protocol
  – **RFC2617** — HTTP Authentication: Basic and Digest Access Authentication
  – **RFC2976** — The SIP INFO Method
  – **RFC3108** — Conventions for the use of Session Description Protocol: ATM Bearer Connections
  – **RFC3204** — MIME Media Types for ISUP and QSIG Objects
  – **RFC3261** — Session Initiation Protocol (SIP)
  – **RFC3262** — Reliability of Provisional Responses in the Session Initiation Protocol
  – **RFC3263** — Session Initiation Protocol (SIP): Locating SIP Servers
  – **RFC3264** — An Offer/Answer Model with Session Initiation Protocol (SIP)
  – **RFC3265** — Session Initiation Protocol: Specific Event Notification
  – **RFC3311** — Session Initiation Protocol (SIP) UPDATE Method
  – **RFC3313** — Private Session Initiation Protocol (SIP) Extensions for Media Authorization.
  – **RFC3323** — A Privacy Mechanism for the Session Initiation Protocol
  – **RFC3325** — Private Extensions to the Session Initiation Protocol for Asserted Identity within Trusted Networks
  – **RFC3329** — Security Mechanism Agreement for the Session Initiation Protocol
  – **RFC3361** — Dynamic Configuration Host Protocol (DHCP-for IPV4) Option for Session Initiation Protocol Servers
  – **RFC3420** — Internet Media Type Message/sipfrag
  – **RFC3428** — Session Initiation Protocol Extension for Instant Messaging
  – **RFC3489** — Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators
  – **RFC3515** — The Session Initiation Protocol Refer Method
  – **RFC3550** — RTP: A Transport Protocol for Real-Time Applications

- **RFC3551** — RTP Profile for Audio and Video Conferences with Minimal Control
- **RFC3605** — Real-Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)

Bluetooth®

- USA: FCC Part 15 Wireless Certification
- Canada: IC RSS 210 Wireless Certification
- EN 300 328
- EN 301 489-1/EN 301 489-17
- Japan METI Wireless approval
- Korean Wireless approval

Audio Quality of Service

- G.711 a-law, G.711 μ-law, G.729a and Annex B, G.722 (SIP software)
- 802.1p/Q, DiffServ and VLAN tagging of telephony LAN port traffic
- Supports echo cancellation and silence suppression

Operating temperature

- +5°C to +40°C/+40°F to +104°F

Relative humidity

- 5% to 95% (non-condensing)

Storage temperature

- -40°C to +70°C/-40° to +158°F

EMC

- United States: FCC 47 CFR Part 15 Class B
- Canada: ICES-003 Class B
- Australia/New Zealand:
  – AS/NZS 3548 Class B
  – CISPR 22 Class B
- European community:
  – EN55022:1998: A1+A2 (Class B)
  – EN 55024:1998: A1 + A2
  – EN 61000-3-2
  – EN 61000-3-3
- Japan – VCCI
- Korea MIC
- China CCC

3

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and public address system; telephone system; and fire detection and alarm system

Safety	US/Canada/Australia/ EU Countries
• United States: UL 60950-1 1st Edition • Canada: CSA 60950-1-03 • European Community: EN 60950-1 +A11 • Australia/New Zealand: AS/NZS 60950.1: 2003 • Mexico NOM approvals • International: IEC 60950-1	• US/Canada: Hearing Aid Compatibility (HAC) as per FCC Part 68 and Industry Canada CS-03 Part V • Australia: AS/ACIF 004 • Complies with CE Marking Requirements: This device complies with the essential requirements and other relevant provisions of Directive 1999/5/EC • Complies with Reduction of Hazardous Substances (RoHS) – (6 of 6) as part of European Union Environmental Directive • American Disabilities Act (ADA) compliant dialpad

Learn More

To learn more about Avaya solutions and products contact your Avaya Account Manager or Avaya Authorized Partner or visit us at: www.avaya.com.

1 Six programmable line/feature keys are supported with 1140E IP Deskphone as the standard offer. Support of seven to twelve programmable line/feature keys requires use of the shift function and is Avaya Communication Server dependent. Consult Avaya server documentation of choice for support details.

2 Context-sensitive soft label keys are Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for further support details.

3 SIP Firmware is supported on selected Avaya and third-party communication servers. See specification details for a listing of supported servers.

4 Unicode support is on Avaya Communication Server protocol only and is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for support details.

5 Avaya Communication Server protocol only. Consult Avaya server documentation of choice for support details.

6 SIP Firmware is available via factory installation or via subsequent firmware migration.

7 UFTP is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for support details.

8 Unicode supported on Avaya Communication Protocol only and is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for further support details.

9 Context-sensitive soft keys are Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for further support details.

10 USB Flash memory devices are supported with SIP software only at time of writing

11 Number of Expansion Modules supported is Avaya Communication Server dependent. Consult Avaya server documentation of choice for support details.

12 Avaya Communication Server Protocol only.

13 DTLS is supported by CS 1000 Rls 6.0, and requires a DTLS patch. MSC 5100 uses USEC but supports it natively on the IPCM

14 Public Key Infrastructure is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for support details.

15 Avaya Communication Server Protocol only.

In the United States:
Avaya
35 Davis Drive
Research Triangle Park, NC
27709 USA

In Canada:
Avaya
195 The West Mall
Toronto, Ontario M9C 5K1
Canada

In Caribbean and Latin America:
Avaya
1500 Concorde Terrace
Sunrise, FL 33323 USA

In Europe:
Avaya
Maidenhead Office Park,
Westacott Way
Maidenhead Berkshire SL6 3QH
UK

In Asia:
Avaya
United Square
101 Thomson Road
Singapore 307591

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

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AVAYA

Avaya 1230 IP Deskphone

## Ideal for the moderate call activity of office workers

The 1230 IP Deskphone is a multi-line, premium intermediate-level desktop phone in the exciting 1200 Series IP Deskphones. Originally designed and optimized for small and medium-sized businesses, the 1200 Series IP Deskphones are now extended to enterprises, offering a competitive feature set with contemporary styling. The 1230 IP Deskphone is best suited for power users with advanced communication needs such as managers, knowledge workers and administrative assistants.

Key features and benefits include:

- Multi-line IP Deskphone supports up to 10 line/programmable feature keys, eight fixed telephony keys, four context-sensitive soft keys and six shortcut/feature keys.

- 9 lines x 25 character display with anti-glare screen combined with a flexible two-position adjustable footstand, optimizes viewing under varied lighting conditions.

- Four-way navigation cluster with Enter key maximizes user choice and flexibility in navigation.

- Superior audio quality leverages some of the latest technologies to ensure crystal-clear conversations.

- Integrated headset and speakerphone — supports a high-quality, two-way speakerphone (handsfree) and other optional headsets for executives or multi-tasking workers.

Avaya 1230 IP Deskphone
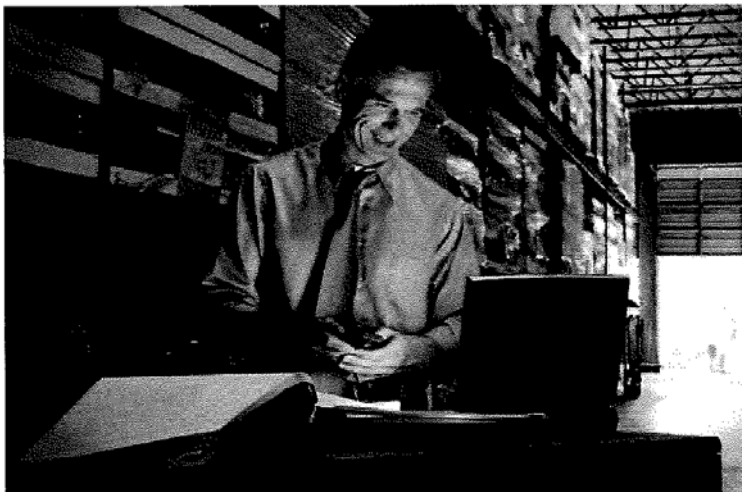
- Simplified communications — the most commonly used Avaya Business Communications Manager (BCM) and Avaya Communication Server 1000 features come preprogrammed on all 1200 Series IP Deskphones. You can also customize the sets from hundreds of BCM and Communication Server 1000 telephony features.

- Integrated 10/100 Base-T Ethernet switch with LAN and PC ports reduces costs, enabling a single cable drop to support both the phone and a collocated PC.

- Supports 802.3af standards-based PoE or local AC power via power adapter.

- Compatible with optional Key Expansion Modules (12-key LCD-based or 18-key LED-based).

PRODUCT BRIEF

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Special features (SIP software only)

Presence
- Supports Presence Notification on phone display
- User Presence Selection

Instant Messaging
- Secure Instant Messaging from phone display
- Message Waiting indication of Instant Messages via blue LED illumination
- On/Off automatic pop-up notification of Instant Messages
- Instant Message log access via Applications Key
- Icons for read, unread, replied to Instant Messages
- Special character support for meaningful text entry

Security
- TLS secure signaling
- Certificates
- SRTP media security

Other
- Graphical status for calls (calls missed, number for each user)
- Incoming and Outgoing Privacy Settings
- Selectable ringtones (up to five) via .wav file storable on deskphone (administrator provisioned)
- Eighteen localized languages supported (up to five storable on deskphone at one time)
- Programmable Feature Keys
- Support for 1200 Series Expansion module
- Local & Network Address Book

Specifications

Physical specifications

Platform support
- Avaya Communication Server 1000
- Avaya Business Communications Manager 50 and Business Communications Manager 450

Display
- Monochrome Film Super Twist Nematic (FSTN) Liquid Crystal Display, 5 line x 25 character with anti-glare coating

IP Phone footstand adjustments
- Desktop viewing adjustments: 25 and 55 degree angles
- Wall mount angle: minus 5 degrees

Fixed keys and soft keys
- Fourteen fixed keys (Handsfree, Headset, Volume Up and Down, Mute, Hold, Goodbye, Applications, Messages, Redial, Directory, Conference, Services and Quit)
- Four context-sensitive soft-keys for easy-to-use navigation[1]

Navigation cluster
- Four-way navigation cluster (left, right, up, down arrows) plus Enter key

Expansion Module
- Supports Expansion Modules for 1200 Series IP Deskphones[2] (12-key LCD-based or 18-key LEDbased[3])

User Selectable Ringtones

Headset support
- Supports third-party wired headsets

Languages supported
- Languages are platform and protocol dependent. Consult platform documentation of choice for further details.

Connectivity/data rates
- Integrated 10/100 Ethernet Switch
- Two 10/100 Ethernet ports for network connection and collocated PC connection
- Auto speed and duplex
- Manually configurable speed and duplex when used with Ethernet switches that do not auto-sense
- Auto MDIX on network port
- Ability to manually disable PC port

Dimensions
- Unpackaged: (H x W x D) 205 x 198 x 190 mm (8.1 x 7.8 x 7.5 inches) approximate, in desktop 55-degree position
- Packaged: (H x W x D) 254 x 260 x 111 mm (10 x 10.25 x 4.75 inches), approximate

Weight
- Packaged: 2.9 lb / 1.32 kg
- Unpackaged: 1.9 lb / .86 kg

Power
- Power over Ethernet: Supports IEEE 802.3af Power over Ethernet; Power Class 2
- AC power: Use Nortel approved adapter; 48VDC, 0.52A
- Power dissipation: 3.4 watts normal, 6.5 watts maximum

Protocols
- Avaya Communication Protocol

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SIP Protocols

- **RFC2327** — SDP: Session Description Protocol

- **RFC2617** — HTTP Authentication: Basic and Digest Access Authentication

- **RFC2976** — The SIP INFO Method

- **RFC3108** — Conventions for the use of Session Description Protocol: ATM Bearer Connections

- **RFC3204** — MIME Media Types for ISUP and QSIG Objects

- **RFC3261** — Session Initiation Protocol (SIP)

- **RFC3262** — Reliability of Provisional Responses in the Session Initiation Protocol

- **RFC3263** — Session Initiation Protocol (SIP): Locating SIP Servers

- **RFC3264** — An Offer/Answer Model with Session Initiation Protocol (SIP)

- **RFC3265** — Session Initiation Protocol: Specific Event Notification

- **RFC3311** — Session Initiation Protocol (SIP) UPDATE Method

- **RFC3313** — Private Session Initiation Protocol (SIP) Extensions for Media Authorization.

- **RFC3323** — A Privacy Mechanism for the Session Initiation Protocol

- **RFC3325** — Private Extensions to the Session Initiation Protocol for Asserted Identity within Trusted Networks

- **RFC3329** — Security Mechanism Agreement for the Session Initiation Protocol

- **RFC3361** — Dynamic Configuration Host Protocol (DHCP-for IPV4) Option for Session Initiation Protocol Servers

- **RFC3420** — Internet Media Type Message/sipfrag

- **RFC3428** — Session Initiation Protocol Extension for Instant Messaging

- **RFC3489** — Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators

- **RFC3515** — The Session Initiation Protocol Refer Method

- **RFC3550** — RTP: A Transport Protocol for Real-Time Applications

- **RFC3551** — RTP Profile for Audio and Video Conferences with Minimal Control

- **RFC3605** — Real-Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)

Audio Quality of Service

- G.711 a- and μ-g-law, G.723.1 and G.729a and Annex B

- 802.1p/Q, DiffServ and VLAN tagging of telephony port traffic

- Supports echo cancellation and silence suppression

Operating temperature
- +5°C to 40°C/40°F to 104°

Relative humidity
- 5% to 95% (non-condensing)

Storage temperature
- -40°C to 70°C/-40°F to 158°F

Administration and security

- Static and Full Dynamic Host Control Protocol (DHCP) address assignment (Full DHCP factory default)

- 802.1ab Link Layer Discovery Protocol (LLDP) for network auto-discovery and inventory management

- 802.1x and Extensible Authentication Protocol (EAPMD5) for network authentication and access control

- Secure signaling using standards-based DTLS[4]

- Media path encryption with RFC 3711-compliant Secure Real-time Protocol (SRTP) pre-shared key and public key infrastructure[5]

- Proactive Voice Quality Management (PVQM) for enhanced administration and diagnostics

Regulatory and safety compliance

EMC
- United States:
  FCC 47 CFR Part 15 Class B

- Canada: ICES-003 Class B

- Australia/New Zealand: CISPR 22

- European community:
  – EN55022 Class B
  – EN 55024
  – EN 61000-3-2
  – EN 61000-3-3

- Japan: VCCI

- Korea MIC: KN22 and KN24

Safety
- United States: UL 60950-1

- Canada: CSA 60950-1-03

- Australia/New Zealand:
  AS/NZS 60950.1:2003

- European Community: EN 60950-1+A11

- International: IEC 60950-1

- Mexico: NOM approvals

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Other

- FCC Part 68 HAC

- IC CS-03 HAC

- Australia AS/ACIF 004

- New Zealand PTC 220

- Complies with the essential requirements and other relevant provisions of Directive 1999/5/EC10

- Complies with Reduction of Hazardous Substances (RoHS) – (6 of 6) as part of European Union Environmental Directive

- American Disabilities Act (ADA) compliant dialpad

[1] Context-sensitive soft keys are Avaya Communication Server/minimum release dependent.

[2] Number of supported modules is communication server dependent.

[3] 18-key LED-based only supported on BCM platform.

[4] DTLS is supported by CS1000 Rls 6.0, and requires a DTLS patch. MCS 5100 uses USEC but supports it natively on the IPCM

[6] Public Key Infrastructure is Avaya Communication Server/minimum release dependent. Consult Avaya server documentation of choice for support details.

Learn More

To learn more about Avaya solutions and products contact your Avaya Account Manager or Avaya Authorized Partner or visit us at: **www.avaya.com**.

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

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AVAYA
The Power of We™

Avaya Aura® Messaging

The next generation of messaging to improve communications and enhance productivity while complementing your current infrastructure

Like most communications technologies, messaging systems are evolving from proprietary, isolated systems to more open, efficient, and intelligent IP based communications solutions. Avaya Aura™ Messaging is Avaya's next generation solution for unified messaging that combines new and existing technology and expertise with industry standards to flexibly integrate within the Avaya Aura™ architecture in Linux based server environments. It offers a rich set of end-user features to enhance productivity and the required flexibility, resilience, and scale to fit into demanding enterprise environments. The result is a cost effective and flexible approach to maximize your current and future messaging system investments, while bringing new application value and functionality to your organization.

Solution Overview

Avaya Aura Messaging is Avaya's next generation messaging solution. Through its intuitive, easy-to-use interface, employees manage email, voicemail, and fax messages on their device of choice including tablets, smartphones, and laptops.

Key Benefits

Avaya Aura Messaging:

- Provides fast, easy, and anytime access across the network

- Allows important calls to get to the right person, at the right time

- Alerts employees to critical new messages

- Enables better customer service with tools that enable faster and better decision making

- Gives flexible deployment options for message storage as well as ability to centralize or distribute per business need

- Reduces cost while maintaining existing dial plans through consolidation of multiple systems

- Helps ensure system is always up and available with multiple levels of resiliency

End User Features

Smoothing transition and training, Avaya Aura Messaging includes familiar Octel®

Aria and INTUITY™ AUDIX® features and telephone user interface that users rely on and provides transparent data/mailbox migration for INTUITY customers. Avaya Aura Messaging also offers new sophisticated capabilities and an enhanced user interface for increased flexibility in managing their messages.

Key Features include:

- **Unified Messaging:** gives you integration of voice messages where users can view all messages at once and who sent them. Listen to or read your messages from email, deskphone or mobile phone.

- **Speech Auto Attendant:** lets callers say a name instead of entering an extension on the keypad

- **Voice recognition:** allows you to say names to address voicemail messages

- **Reach Me:** provides call forwarding to up to three numbers with user controlled settings

- **Avaya one-X® Speech:** integrates with solution to allow you to easily manage your voice messages, email, and calendar with verbal directions

- **Notify Me:** text message and email notification as well as outcalling

- **Internet Message Access Protocol (IMAP):** gives users easy access to messages from most email clients

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- **Self administration:** enables users to easily manage their options through a web portal

- **Speech to Text:** Converts voicemail to text with delivery to your email inbox, smartphone, and other choices – for faster at a glance access to messages (delivered through third party)

- **Client-less Outlook toolbar:** Eliminates PC software installation, distribution and management

- **Telephone User Interface (TUI):** Per user choice of Aria and AUDIX-like TUI to minimize user retraining

- **Basic or mainstream licensing:** Provides cost effective per user deployment of basic versus enhanced capabilities

System Features

Flexible

The flexible architecture of Avaya Aura* Messaging is designed to fit a wide range of customer environments: from centralized to decentralized and from unified (integrated with an existing email system) to standalone (Avaya Message Store). The solution also has the ability to adapt over time as enterprise environments evolve in response to growth, centralization or increasing high availability/disaster recovery demands.

Scalable

Avaya Aura* Messaging is a scalable solution ranging from an easy-to-deploy single server system (with application and storage roles combined on a single virtual machine) to a fully scalable front-end/back-end configuration with dedicated servers for the application and storage roles.

Resilient

The Avaya Aura Messaging architecture provides a variety of high availability/disaster recovery options – ranging from an N+1 configuration for application servers, to locally survivable application servers that can stay fully operational with locally cached messages and greetings, to geographically redundant options for application servers.

Message Store

Avaya Aura Messaging supports simultaneous use of an Avaya message store, Microsoft Exchange and VMware Zimbra message stores. Assignment of message store type can be done on a per user basis,

Telephony Integration

Avaya Aura Messaging supports SIP for telephony integration and is certified with Avaya Aura* Communication Manager, Avaya Aura* Session Manager, Avaya Communication Server 1000, and Avaya SIP Enablement Services (SES) as well as other PBXs through gateways.

Server Models

Two server models are available.

- A standard **Messaging server** can serve as a single server (combining application and storage role), an application only server, or a storage only server.

- A "high storage capacity" **Messaging server** can serve as a storage server able to support a larger number of mailboxes.

Avaya Aura Messaging uses standard Linux-based servers.

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Migration and Upgrade Paths

Avaya Aura Messaging allows a smooth migration from Octel Aria and INTUITY AUDIX systems with migration incentives and preservation of key user data from existing systems for INTUITY customers.

Localized Versions

Avaya Aura Messaging supports multiple languages for availability in key markets world wide.

Learn More

To Learn more about the next generation of messaging, Avaya Aura Messaging please contact your Avaya Account Manager or Avaya Authorized Partner or visit us at **avaya.com**.
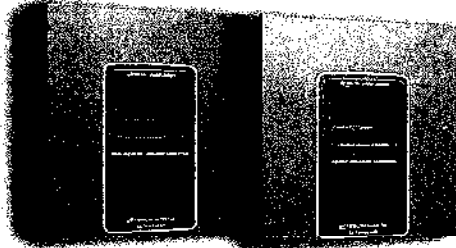
Avaya Aura® Messaging Technical Specifications

Dell R610 and HP DL360 G7, 1U — Available in two configurations

Standard Messaging Server Specifications: Can serve as a single server (combining application and storage roles), an application only server, or a storage only server.	• 1 Intel Xeon E5520 Quad-core 2.4 Ghz processor • 12 GB system memory • 438 GB Total Hard Drive Space, 10K RPM • 300 ports	• RAID 5 • In Application Only role: cluster up to 3 servers + 1 redundant
High Storage Capacity Messaging Server Specifications	• 1 Intel Xeon E5520 Quad-core 2.26 Ghz processor • 12 GB system memory • 584 GB Total Hard Drive Space, 15K RPM	• RAID 5 • Dual Power Supply

HP DL360 G7, 1U

Avaya one-X® Speech Server Specifications	• 1 Intel Xeon E5620 Quad-core 2.4 Ghz processor • 4 GB system memory • 292 GB Total Hard Drive Space, 10K RPM	• RAID 1 • Dual Power Supply • Microsoft Windows Server 2003 R2

Standard Features & Applications

Configuration Dependent	• End User Features » Enhanced Octel Aria and INTUITY AUDIX-like UIs » Voice recognition for message addressing » IMAP access to voice messages » Clientless Outlook toolbar » Browser application for managing user settings » Reach Me and Notify Me features » Speech to Text (through third party) • Basic Speech Auto Attendant • Caller Applications • Flexible » Centralized Deployment » Distributed Deployment » Adapt (relocation of Servers as business needs change)	• Scalable » Single Server » Multi-Server (front-end / back-end) • Resilient » Geographical Redundancy option for application servers (clustered over WAN) » Geographically redundant N + 1 Configurations » Locally survivable application server • Message Store » Unified with Microsoft Exchange or VMware Zimbra (Integrated with an existing email system) » Stand-alone (Avaya Message Store) » Mix of multiple message stores » Per user selectable message store • Telephony Integration » SIP only » Avaya Aura® Communication Manager » Avaya Aura® Session Manager » Avaya Communication Server 1000 » Avaya SIP Enablement Services (SES) » Third party PBX with gateway

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SUPPRESSION CONTROL PANELS

Fire-Lite's new UL 864 Ninth Edition listed releasing panels are designed with the latest in microprocessor technology to meet the most demanding conventional releasing applications. With the flexibility and extra high reliability found typically only in advanced systems, the new Deluge/Preaction and Agent release models feature a host of new features, such as built-in easy-to-use programming templates.

MRP-2001
DELUGE/PREACTION CONTROL PANEL
- Six-zone Style B (Class B) or Six-zone Style D (Class A) with optional modules
- Four Programmable Output Circuits Style Y (Class B) or Four Programmable Output Circuits Style Z (Class A) with optional modules
- Outputs programmable for Releasing Solenoids
- Dual hazard operation
- Adjustable waterflow discharge timer and two soak timers
- Cross-zone capability
- Pre-programmed and custom application templates
- Built-in NAC synchronization for System Sensor, Wheelock, Gentex, Faraday and Amseco devices
- Built in programmer: Integral 80 character LCD display with backlighting and keypad
- Annunciator bus supports up to 8 devices, including new ANN-80 LCD Remote Annunciator, remote serial or parallel printer gateway, and LED graphic annunciator
- 7.0 amps total usable current

MRP-2002
AGENT RELEASE CONTROL PANEL
- Six-zone Style B (Class B) or Six-zone Style D (Class A) with optional modules
- Four Programmable Output Circuits Style Y (Class B) or Four Programmable Output Circuits Style Z (Class A) with optional modules
- Outputs programmable for Releasing Solenoids
- Dual hazard operation
- Adjustable pre-discharge, discharge and waterflow delay timers
- Programmable Abort operation
- Cross-zone capability
- Pre-programmed and custom application templates
- Built-in NAC synchronization for System Sensor, Wheelock, Gentex, Faraday and Amseco devices
- Built in programmer: Integral 80 character LCD display with backlighting and keypad
- Annunciator bus supports up to 8 devices, including new ANN-80 LCD Remote Annunciator, remote serial or parallel printer gateway, and LED graphic annunciator
- 7.0 amps total usable current

ROME

The new Relay Option Module Enclosure eliminates the need for multiple single gang enclosures. It also operates off the annunciator BUS, and therefore does not consume a device point.

New!

ROME
Relay Option Module Enclosure
- 10 Relay card, plus remote enclosure for mounting option for 2nd card
- Mounting for multiple SLC modules
- ANN BUS and SLC connectivity

PULL STATIONS

BG-12
BG-12LX
BG-12SP

BG-12 Series
The BG-12 Series is a cost-effective, non-coded series of fire alarm pull stations. Available in both conventional and addressable versions, including single and dual actions, with either key lock or hex key, these Lexan® pull stations are typically specified and desired by most architects and engineers.

BG-8
The BG-8, conventional, single action metal fire alarm pull station for those jurisdictions where metal pull stations are still required.

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QUICK REFERENCE GUIDE

Conventional Fire Alarm Control Panels / Addressable Control Panels

Feature	MS-2	MS-4	MS-5UD	MS-10UD	MS-25	MS-9050UD	MS-9200UDLS	MS-9600UDLS
Panel Voltage	24	24	24	24	24	24	24	24
Addressable Points	N/A	N/A	N/A	N/A	25	50	198	636 (2 loops)
LiteSpeed Protocol	N/A	N/A	N/A	N/A	N/A	No	Yes	Yes
Number of Zones	2	4	5	10	5	20	99	99
Class A or B Initiating Zones	B Only	B or A option	B or A option	B or A option	B Only	A or B	A or B	A or B
Supports System Sensor i3 Detectors with Freeze Warning	Yes	Yes	Yes	Yes	N/A	N/A	N/A	N/A
Notification Circuits	1	2	4 (A or B)	4 (A or B)	2 (B Only)	2 (A or B)	4 (A or B)	4 (A or B)
Notification Power (Amps)	3	3.0-6.0	3	7	2.0	2.5	3.0-6.0	7
Communicator	411 Series	411 Series	Built-in	Built-in	Built-in	Built-in	Built-in	Built-in
Supports Upload/Download	No	No	Remote or Local	Remote or Local	Local	Remote or Local	Remote or Local	Remote or Local
Works with IP Communicator	No	No	Yes	Yes	No	Yes	Yes	Yes
Battery Range (in Amp Hours)	7.0-18	7.0-18	7.0-18	7.0-26	7.0-33	7.0-18	7.0-18	7.0-26
Alarm Contact	Yes	Yes	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable
Trouble Contact	Yes	Yes	Programmable	Programmable	Programmable	Programmable	Yes	Yes
Supervisory Contact	No	Yes	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable
Reverse Polarity Transmitter	Option	Option	Option	Option	Option	Option	Option	Option
Temporal Coding	Yes	Yes	Programmable	Programmable	Programmable	Programmable	Programmable	Programmable
Optional Remote Annunciator	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Built-in Sync-Selective Silence	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supports Printer	No	No	Option	Option	No	Option	Option	Yes
Listings	UL, CSFM, MEA	UL, CSFM, MEA	UL, CSFM, MEA, FM	UL, CSFM, MEA, FM	ETL	UL, CSFM, MEA, FM	UL, CSFM, MEA, FM	ULC, CSFM, MEA, FM

Fire Alarm Panel Communicators / Suppression Control Panels

Feature	411	411UD	411UDAC	IPDACT-2UD	MRP-2001	MRP-2002
Input DC Voltage	12/24	12/24	12	12/24	24	24
Number of Zones/Channels	3	4	4	Addressable	6	6
Class A or B Zones	B	B	B (one A)	N/A	B or A Option	B or A Option
Control Communicator	Slave Comm.	Slave Comm.	Stand-Alone or Slave Comm.	Slave Comm. Contact ID Only	No	No
Remote Upload/Download	No	Yes	Yes	Yes	No	No
No. of Notification Circuits	N/A	N/A	1	N/A	4	4
Supports System Sensor i3 Detectors with Freeze Warning	N/A	N/A	N/A	N/A	Yes	Yes
Notification Power (Amps)	N/A	N/A	1	N/A	7	7
Battery Range (in Amp Hours)	N/A	N/A	Up to 14.0	N/A	7.0-26	7.0-26
Aux Input	No	No	No	Yes	N/A	N/A
Alarm Contact	No	Option (prog.)	Option (prog.)	No	Programmable	Programmable
Trouble Contact	No	Option (prog.)	Option (prog.)	No	Programmable	Programmable
Supervisory Contact/Output	No	Option (prog.)	Option (prog.)	Yes	Programmable	Programmable
Optional Remote Annunciator	No	No	No	No	Yes	Yes
Supports Printer	No	No	No	No	Yes	Yes
Listings	UL, ULC, CSFM, MEA	UL, ULC, CSFM, MEA	UL, ULC, CSFM, MEA	UL, CSFM	UL, CSFM, MEA, FM	UL, CSFM, MEA, FM

Fire·Lite Alarms
by Honeywell

ISO 9001 CERTIFIED

One Fire-Lite Place, Northford, CT 06472-1610 USA
Phone: (203) 484-7161 • Fax: (203) 484-7118 • www.firelite.com
In Canada Phone: (905) 856-8733 • Fax: (905) 856-9687

PL-4 5/10 5K

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PRODUCT LINE BROCHURE

FireLite Alarms
by Honeywell

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CONVENTIONAL FIRE CONTROL PANELS

Fire-Lite's UL 9th Edition listed 24 Volt conventional fire alarm control panels bring the latest in microprocessor technology to conventional fire controls and are easy-to-install, program and operate. With two-zone, four-zone, five-zone and ten-zone configurations, these units offer a variety of options to meet most local, state and national requirements.
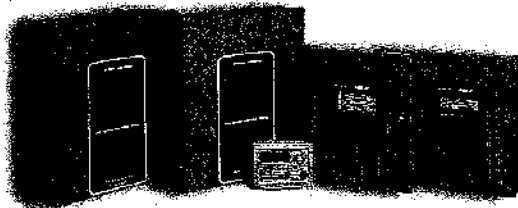
MS-5UD
UPLOAD/DOWNLOAD

* Five-zone Style B (Class B) or Five-zone Style D (Class A) with optional module
* Four NAC Circuits Style Y (Class B) or Four NAC Circuits Style Z (Class A) with optional modules
* Built-in NAC synchronization for System Sensor, Wheelock, Gentex, Faraday and Amseco devices
* Integral 80 character LCD display with backlighting and keypad
* Annunciator bus supports up to 8 devices, including new ANN-80 LCD Remote Annunciator, ANN-S/PG remote serial or parallel printer gateway, ANN-RLY, 10 form C relay board, ANN-LED Zone annunciator and ANN-I/O LED driver board for graphic annunciators.
* Built-in two-line digital communicator for off premises monitoring
* Three Form-C programmable relays
* 3.0 amps total usable current

MS-10UD
UPLOAD/DOWNLOAD

* Ten-zone Style B (Class B) or Ten-zone Style D (Class A) with optional module
* Four NAC Circuits Style Y (Class B) or Four NAC Circuits Style Z (Class A) with optional modules
* Built-in NAC synchronization for System Sensor, Wheelock, Gentex, Faraday and Amseco devices
* Built-in programmer: Integral 80 character LCD display with backlighting and keypad
* Annunciator bus supports up to 8 devices, including new ANN-80 LCD Remote Annunciator, ANN-S/PG remote serial or parallel printer gateway, ANN-RLY, 10 form C relay board, ANN-LED Zone annunciator and ANN-I/O LED driver board for graphic annunciators.
* Built-in two-line digital communicator for off premises monitoring
* Three Form-C programmable relays
* 7.0 amps total shared power

MS-2
* Two initiating zones compatible with 2- and 4-wire smoke detectors; one zone programmable for combo, supervisory and waterflow
* One Notification Appliance Circuit (NAC) with built-in horn/strobe synchronization for System Sensor®, Wheelock® or Gentex® with selectable silence.
* Also compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches and other normally-open contact devices.
* 3.0 amps total usable current

MS-4
* Four initiating zones compatible with 2- and 4-wire smoke detectors, one zone programmable for combo, supervisory and waterflow
* Two NACs with built-in horn/strobe synchronization for System Sensor®, Wheelock® or Gentex® with selectable silence
* Optional module to convert all four initiating zones and two NACs to Class A
* Also compatible with conventional input devices such as two- and four-wire smoke detectors, pull stations, waterflow devices, tamper switches and other normally-open contact devices.
* Compatible with System Sensor's smoke detectors, providing "EZ Walk Test" and a Remote Maintenance Signal (panel is offered as i³ Ready, no additional modules needed)
* 3.0 amps total usable current and expandable to 6.0 amps total with optional second transformer
* Options include a plug-in 4XTMF transmitter module, a 4XLMF module to support LED annunciators, and a plug-in 4XZMF zone relay module

SYNCHRONIZED POWER SUPPLIES

Known for dependability, Fire-Lite's power supply family, the FCPS-24FS6 and FCPS-24FS8, are recognized as the benchmark for fire alarm power supplies. Featuring built-in System Sensor, Wheelock, and Gentex strobe synchronization, these UL 9th Edition listed power supplies can be cascaded with strobe timing maintained to meet any installation requirement.

FCPS-24FS6/FCPS-24FS8

* 24 volt, 6 or 8 amp versions available
* Four Class B (Style Y) Class A (Style Z) outputs
* Built-in Strobe Synchronization for ADA Compliance
* Built-in 18 amp Hour Battery Charger
* Operates as a sync follower or a sync generator (default)

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AUDIO EVACUATION SYSTEMS

Fire-Lite's UL 9th Edition listed Audio Command Center product line offers voice evacuation, zone splitting and distributed audio capability.
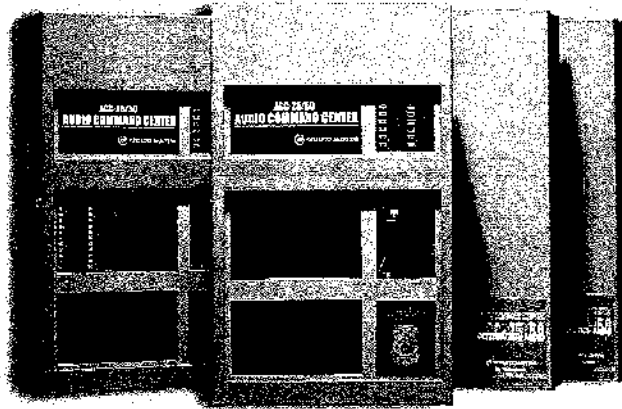
ACC-25/50

Audio Command Center

- Single circuit (one amplifier) or dual circuit (two amplifiers) at 25 watts each
- Provides five field-programmable messages, up to 60 seconds total message duration
- Integral commercial grade, emergency communications or paging microphone
- Support for one additional remote emergency communications or paging microphone
- Full supervision in both active and standby conditions
- Integral power supply can charge up to 18 AH batteries, housed in the cabinet
- May be used with most UL-listed Fire Alarm Control Panels (messages can be initiated through dry contact or via Fire Alarm NAC circuits)
- May be controlled directly over a single cable from a MS-9200UDLS, MS-9600LS or MS 9600UDLS Fire Alarm Panel using the serial annunciator bus or ANN-BUS
- Independent power to amplifiers prevents a short circuit in one from shutting down the second

ACC-25/50 ZS

Audio Command Center
Audio "Zone Split" System

- Similar to the ACC-25/50 but with ability to split audio into eight different circuits
- Power supply is capable of charging up to 18 Amp Hour batteries, which can be housed in the ACC-25/50 cabinet
- May be controlled directly over a single cable from a MS-9200UDLS, MS-9600LS or MS-9600UDLS Fire Alarm Panel using the ACS RS-485 bus or ANN-BUS

ACC-25/50 ZST

Audio Command Center
Audio "Zone Split" System with Telephones

- Similar to the ACC-25/50 but with ability to split audio into eight different circuits and up to 24 telephone circuits
- Fire Fighter Telephone Module with keypad which provides indications of phone activation, remote page activation, remote microphone activation and corresponding trouble conditions
- Permits up to six (local phone handset plus five remote phone handsets) simultaneous connections
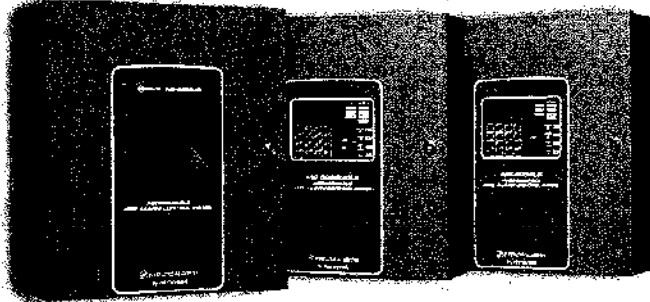
ACC-25/50 DA

Distributed Audio Panel

- Expands ACC-25/50 to a possible 1500 watts of audio power
- Up to 29 distributed audio panels can be added to one ACC-25/50
- Optional backup message generator if audio riser fails
- Contains backup tone generator if message generator is not installed and audio riser fails
- Supports either 25 volt or 70.7 volt speaker operation
- Independent power to amplifiers prevents a short circuit in one from shutting down the second

ACC-25/50 DAZS

Distributed Audio Zone System

- Expands ACC-25/50ZS or ACC-25/50ZST with up to two additional audio zone splitting panels
- Creates a possible 150 watts distributed audio power (50 watts for each panel) split into 8 circuits each for a total of 24 different speaker circuits
- Supports either 25 volt or 70.7 volt speaker operation
- Optional backup message generator if audio riser fails
- Contains backup tone generator if message generator is not installed and audio riser fails
- Independent power to amplifiers prevents a short circuit in one from shutting down the second

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ADDRESSABLE FIRE ALARM CONTROL PANELS

MS-9050UD, MS-9200UDLS and MS-9600LS/MS-9600UDLS

Addressability Within Reach

With three sizes to choose from, the 50-point MS-9050UD, the 198-point MS-9200UDLS and the 636-point MS-9600LS/MS-9600UDLS, our updated addressable series can handle your small through mid-sized applications. We've maintained our ease of installation, programming and maintenance, reducing the time it takes to get a system up and running. Plus, the MS-9200UDLS and MS-9600LS/MS-9600UDLS offer LiteSpeed™ blazin' fast polling protocol to ensure the safety and security of your building and its occupants.

All three new panels also offer:
- Ability to connect devices via unshielded "fire" wire up to 10,000 feet, allowing for easier retrofits and less install time
- Autoprogram locates and programs the panel for each device and insures correct addressing and type of device
- Larger, common backbox enclosure that allows more room to work
- All electronics mounted on chassis, which can be changed by removing only two nuts, for faster change-outs and easier upgrades
- Notification appliance circuits all have built-in synch for the industry's leading manufacturers including System Sensor®, Wheelock® and Gentex®
- Compatibility with Fire-Lite's Internet Fire Communicators, for communicating alarms over WAN or LAN to the central station
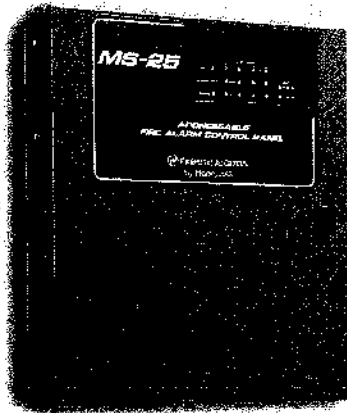
MS-25
25 Point Fire Alarm Control   New!

The MS-25 is the latest addition to the broad array of Fire-Lite Alarms offerings, which have long set the standard for providing a solution to satisfy every application. The new, 25 point MS-25 fire alarm control panel provides a cost-effective addressable solution to meet even the smallest specification.

But unlike other small panels, the MS-25 is a fully featured, Addressable alternative...at a Conventional panel price. It runs on only a single loop of standard wire, provides pin-point identification, and includes maintenance alerts and auto-programming. The MS-25 supports any combination of its own HFS detectors and modules (see below):

- Right-sized, giving "Addressable" benefits at a low Conventional alarm price
- Factory programmed, or use your web browser
- Built-in communicator
- Uses any wire
- Uses cost-effective Honeywell Fire Systems Detectors and Modules

HFS-P

HFS-MR

DETECTORS & MODULES	DESCRIPTIONS
HFS-P	Photoelectric Smoke Detector
HFS-PT	Photoelectric Smoke & Thermal Detector
HFS-T	Thermal Detector
HFS-MR	Addressable Relay Module
HFS-MM	Addressable Mini Monitor Module
HFS-D	Addressable Duct Detector with Photoelectric Smoke
HFS-DPR	Replacement Photoelectric Smoke for Duct Detector

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MS-9050UD
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- Single loop supports up to 50 addressable points of any type
- Integrated DACT for off premises monitoring
- Built-in NAC synchronization for System Sensor, Wheelock, and Gentex devices
- Annunciator bus supports up to 9 devices, including new ANN-80 LCD Remote Annunciator, remote serial or parallel printer gateway, and LED graphic annunciator
- Auto programming feature quickly configures detectors and modules
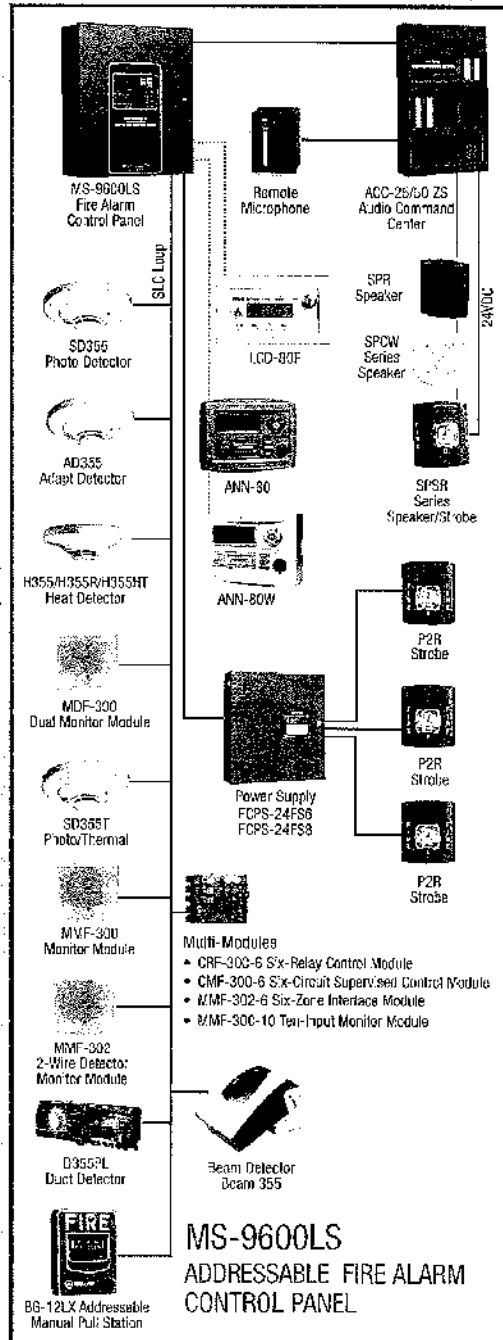- Competes with conventional systems, providing addressable point identification at similar price point

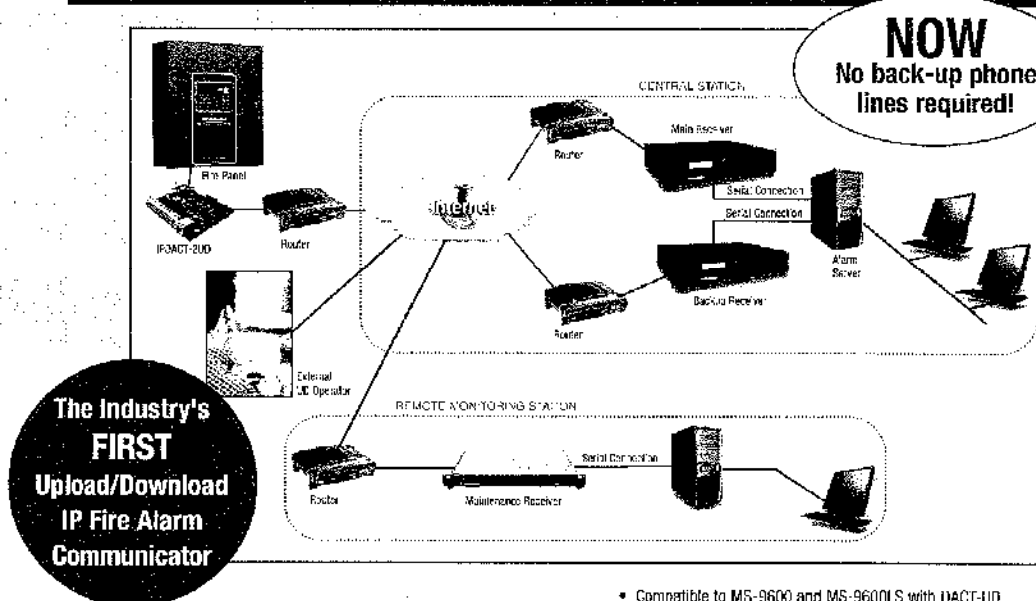## MS-9200UDLS
UPLOAD/DOWNLOAD

New Features!

- USB programming port
- Uses PS-Tools programming utility
- Supports new lower cost annunciator or alternatively our legacy annunciator device
- Single SLC provides support for 198 addressable devices on twisted, unshielded fire wire
- New FAST LiteSpeed SLC communication polls 10 devices at a time and operates on standard, unshielded wire
- Built-in digital communicator for off premises monitoring and remote up/download
- 4 NACs with built-in sync for System Sensor, Wheelock and Gentex
- 3 amp total shared power supply expandable to 6 amps of notification power with optional transformer
- Supports up to 32 optional LCD-80F or ACS LED annunciators

MS-9600LS/MS-9600UDLS

- Uses PS-Tools programming utility
- Supports new lower cost annunciator or alternatively our legacy annunciator device
- Up to 159 detectors and 159 control/monitor modules (total of 318 devices) per SLC (636 with SLC-2LS option card)
- New FAST LiteSpeed SLC communication polls 10 devices at a time and operates on standard, unshielded wire
- Autoprogrammable function reduces installation time
- Advanced Fire Technology includes sensitivity testing and automatic drift compensation
- New 7 Amp total shared power Switching Power Supply provides extra power to four Class B or two Class A Notification Appliance Circuits with onboard Sync Select for System Sensor®, Wheelock® or Gentex® devices

MS-9600LS Fire Alarm Control Panel — Remote Microphone — ACC-25/50 ZS Audio Command Center — SPR Speaker — LCD-80F — SPCW Series Speaker — ANN-80 — SPSR Series Speaker/Strobe — SD355 Photo Detector — AD355 Adapt Detector — H355/H355R/H355HT Heat Detector — ANN-80W — P2R Strobe — MDF-300 Dual Monitor Module — SD355T Photo/Thermal — Power Supply FCPS-24FS6 FCPS-24FS8 — P2R Strobe — MMF-300 Monitor Module — Multi-Modules — P2R Strobe — MMF-302 2-Wire Detector Monitor Module — D355PL Duct Detector — Beam Detector Beam 355 — BG-12LX Addressable Manual Pull Station

Multi-Modules
- CRF-300-6 Six-Relay Control Module
- CMF-300-6 Six-Circuit Supervised Control Module
- MMF-302-6 Six-Zone Interface Module
- MMF-300-10 Ten-Input Monitor Module

MS-9600LS
ADDRESSABLE FIRE ALARM CONTROL PANEL

Long Beach Unified School District Single Source Resolution for classroom audiovisual management system; intrusion detection system; secondary indicating clocks and public address system; telephone system; and fire detection and alarm system

FIREWATCH™ SERIES OF COMMUNICATORS

NOW No back-up phone lines required!

The Industry's **FIRST** Upload/Download IP Fire Alarm Communicator

Internet Fire Communicator

Introducing FIREWATCH™ IP Communicator, Fire-Lite's new Internet Fire Communicator. Designed to work with later-model Contact ID and DACT-equipped Fire-Lite fire panels, the IP Communicator sends information over any type of Ethernet network connection to a central station equipped with a compatible Teldat VisorALARM® IP receiver. The IP Communicator supervises the connection to the central station every 90 seconds, providing faster detection of a connection fault and saves the cost of dedicated redundant phone lines.

- Compatible to MS-9600 and MS-9600LS with DACT-UD, MS-9200UD, MS-9200UDLS, MS-9600UDLS, MS-9050UD, MS-5UD, MS-10UD, and any competitive panel using the 411 series
- Transmits alarms/events over any IP network: Internet and intranet using customer shared equipment
- Supports contact ID over IP and does not require static IP address
- Plugs into Primary phone line on panel DACT
- Mounts in new Fire-Lite common enclosure or external enclosure
- UL 864 9th Edition listed to meet NFPA 72 OT (other transmission technologies), packet switched data network, PSDN

TELEPHONE LINE COMMUNICATORS
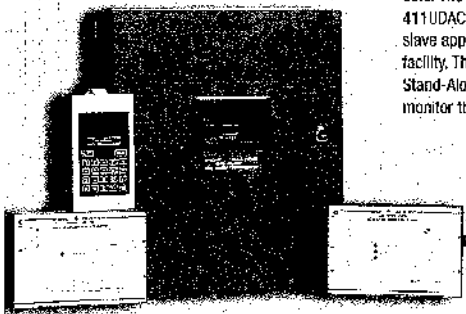
The Fire-Watch UL 9th Edition listed 411 Series is compact, slave and Stand-Alone Digital Alarm Communicator Transmitters (DACTs). DACTs are programmable for a variety of fire, supervisory, trouble, and non-fire applications. The series consists of the 411, 411UD and 411UDAC products. The 411 provides three supervised monitoring inputs/channels, while the 411UD and 411UDAC provide four inputs/channels. The 411 and 411UD are cost-effective solutions for slave applications that require a control panel to transmit system status to an offsite monitoring facility. The 411UDAC can also provide slave communication, however its primary function is a Stand-Alone Communicator. The 411 and the 411UD can be used with the IP Communicator to monitor the alarm trouble and supervisory relays of any competitive fire panel.

411 Series

- Three models: 411/411UD/411UDAC, slave or Stand-Alone up to 4 input/channels, programmable with PC based upload/download utility PK- 411UD or with on-site programmer PRO-411
- Industry-first, UL recognized "dialer-runaway" prevention feature
- Complies with FCC long distance Carrier Access Code (CAC) requirements of up to 20-digit telephone numbers
- Fifteen reporting formats including the popular Ademco Contact ID format
- 411UDAC includes an integral power supply/battery charger

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Products : Control Panels

Discover the NOTIFIER Intelligent, Conventional, or Voice Evacuation control panel that best fits your needs

Goto Discontinued Products page >

Intelligent Panels

Product ONYX Series	Application	See Also
NFS-320	• Small applications • 1 Signaling Line Circuit (SLC) • Up to 318 intelligent points • UL 864 9th Edition listed	Datasheet Engineering Spec. Product Overview
NFS-320C	• Small applications • 1 Signaling Line Circuit (SLC) • Up to 318 intelligent points • UL 864 9th Edition listed	Datasheet Engineering Spec.
NFS-320SYS	• Small applications • 1 Signaling Line Circuit (SLC) • Up to 318 intelligent points • UL 864 9th Edition listed	Datasheet
NFS2-640	• Small to mid-size applications • 1 to 2 SLCs • Up to 636 intelligent points • UL 864 9th Edition listed	Datasheet Engineering Spec. Product Overview
NFS2-3030	• Mid-size to large applications • 1 to 10 SLCs • Up to 3,180 intelligent points • UL 864 9th Edition listed	Datasheet Engineering Spec. Product Overview

FireWarden Series		
FireWarden-50	• Small applications • 1 SLC • Up to 50 addressable points • UL 864 9th Edition listed	Datasheet Product Overview
FireWarden-100-2(E)	• Small applications • 1 SLC • Up to 198 addressable points • UL 864 9th Edition listed	Datasheet Product Overview

Spartan-25(E)(C) - NSP-25(E)(C) Addressable FACP With Built-in Communicator		
	• Small applications • 1 SLC • Up to 25 addressable points • UL 864 9th Edition listed	Datasheet Product Overview Engineering Spec.

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Voice Evacuation Panels

Product	Application	See Also
ONYX Digital Voice Command	• Mid to large size applications • 13 channel digital audio • Mid to large size single panel applications • Network applications w/multiple audio command centers • Multichannel & Firefighters telephone application • UL 864 9th Edition listed	Datasheet Product Overview
FireVoice-25/50	• Small applications • Single channel audio • UL 864 9th Edition listed	Datasheet Product Overview

Conventional Panels

Product	Application	See Also
RP2001	• Small deluge, pre-action applications • Six initiating zones • Four programmable output circuits • UL 864 9th Edition listed	Datasheet Product Overview
RP2002	• Small agent release applications • Six initiating zones • Four programmable output circuits • UL 864 9th Edition listed	Datasheet Product Overview
SFP-5UD	• Small applications • 5 initiating zones • Built-in Digital Alarm Communicator Transmitter (DACT) • UL 864 9th Edition listed	Datasheet Product Overview
SFP-10UD	• Small to mid-size applications • 10 initiating zones • Built-in Digital Alarm Communicator Transmitter (DACT) • UL 864 9th Edition listed	Datasheet Product Overview
SFP-2402/2404	• Small applications • 2 to 4 conventional IDCs • Support 13 detectors • UL 864 9th Edition listed	Datasheet Product Overview

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Products : Emergency Voice Communication Systems

	Product	Application	Documentation
	ONYX Digital Voice Command	• Mid to large size applications • 13 channel digital audio • Mid to large size single panel applications • Network applications w/multiple audio command centers • Multichannel & Firefighters telephone application • UL 864 9th Edition listed	Datasheet Product Overview
	FireVoice-25/50	• Small applications • Single channel audio • UL 864 9th Edition listed	Datasheet Product Overview

http://www.notifier.com/products/voiceevac.htm   1/5/2012

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Products : Network

Network Products

Discover the power, flexibility, and scalability of NOTIFIER's intelligent fire alarm network products, and learn how they can provide the fire and life safety solution for your next project.

Product	Applications	Documentation
HIGH-SPEED NOTI-FIRE-NET	Large campus and high rise applications requiring multiple NOTIFIER intelligent fire alarm control panels to be linked together to operate independently, yet cohesively, as part of a unified fire alarm network. These FACPs are connected using HS-NCM cards that afford greater capacity and higher speeds.	Data Sheet Product Overview
NOTI-FIRE-NET (UL 864 9th Edition Listed)	Large campus and high rise applications requiring multiple NOTIFIER intelligent fire alarm control panels to be linked together to operate independently, yet cohesively, as part of a unified fire alarm network.	Data Sheet Product Overview
Modbus	A gateway interface between NOTI-FIRE-NET and a client using Modbus/TCP communications protocol.	Data Sheet Product Overview
NCA-2 Network Control Annunciator (UL 864 9th Edition Listed)	Where multiple locations require display and control capability over the entire fire alarm network or a subset of it.	Data Sheet Product Overview
BACnet Gateway	Installations requiring an interface between NOTI-FIRE-NET and a network using the BACnet/IP communication protocol.	Data Sheet Product Overview
FirstVision	A hardware and software package used for the Interactive Firefighter's display.	Data Sheet Product Overview
ONYXWeb	Allows remote viewing of the ONYXWorks workstation via the Internet or intranet 24/7.	Data Sheet Product Overview
ONYXWorks	Applications requiring a single-point-of-control workstation for a building, campus, citywide or global enterprise, that integrates NOTIFIER systems with other security, card access, and CCTV systems as well as competitors' fire alarm control panels over a network.	Data Sheet Product Overview
NFN Web Server	Network installations where 24/7 fire alarm status monitoring via the internet is desired.	Data Sheet Product Overview

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http://www.notifier.com/products/network.htm   1/5/2012

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Products : Integrated

Discover how NOTIFIER's integrated products and technologies can unite and protect multiple facilities fire and security systems throughout a city, across the country, or around the world over a single network.

Product	Applications	Documentation
ONYXWorks (UL 864 9th Edition Listed)	Applications requiring a single-point-of-control workstation for a building, campus, citywide or global enterprise, that integrates NOTIFIER systems with other security, card access, and CCTV systems as well as competitors' fire alarm control panels over a single network.	Data Sheet Product Overview Engineering Specification
ONYXWorks Lite	A high-performance color graphics software package capable of monitoring up to four (4) ONYX series panels.	Data Sheet Product Overview
Receivers Gateway	An intelligent software gateway to the Digital Alarm Communicator Receiver (DACR) for the ONYXWorks facilities monitoring workstation.	Data Sheet Product Overview
WinPak Pro	The WIN-PAK Gateway is the protocol translator for communication between a WIN-PAK PRO 2005 network and the ONYXWorks Workstation. The gateway processes information coming from each point on the WIN-PAK PRO 2005 and SE/PE network and displays the point's event information on the Workstation.	Product Overview
ONYXWeb	Allows remote viewing of the ONYXWorks workstation via the Internet or intranet 24/7.	Data Sheet Product Overview
Embedded Gateway	Intelligent gateway interface with IP capabilities that allows remote monitoring of ONYX panel(s) via Ethernet.	Data Sheet Product Overview

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Products : Peripherals

Browse by category :   Intelligent Devices   Conventional Devices   Notification Appliances

Intelligent Devices

Product	Description	Documentation
FAPT-851	Acclimate™ Intelligent Photo Thermal Detector; with FlashScan	Data Sheet
FCM and FRM Series Modules	Intelligent control and relay modules with FlashScan	Data Sheet
FCO-851	IntelliQuad™ PLUS - IntelliQuad™ Advanced Multi-Criteria Detector with four unique sensing elements	Data Sheet
FMM and F/M Series Modules	Intelligent monitor modules with FlashScan	Data Sheet
FSB-200(A)/-200S(A)	Intelligent Beam Smoke Detector with FlashScan	Data Sheet
FSC-851	IntelliQuad - Advanced Multi-Criteria Detector with four unique sensing elements	Data Sheet
FSI-851	Intelligent Plug-in Ionization Detector with FlashScan	Data Sheet
FSL-751 VIEW®	Intelligent Laser Smoke Detector with FlashScan	Data Sheet
FSP-851/FSP-851T/FSP-851R	Intelligent Plug-in Photo Detector with FlashScan	Data Sheet
FST-851 Series	Intelligent Thermal Detector w/FlashScan	Data Sheet
FTM-1(A)	Firephone Control Module with FlashScan®	Data Sheet
ISO-X	SLC Loop Isolator Module; isolates against short circuits on the SLC.	Data Sheet
NBG-12LX	Addressable NBG-12f Pull Station; with FlashScan.	Data Sheet
XP10-M	Ten Input Monitor Module	Data Sheet

- - - - - - FireWarden Peripherals - - - - - -

N100-ISO	Fault Isolator Mod. for FireWarden Series	Data Sheet
NC-100(R)	Control and Relay Module for FireWarden Series	Data Sheet
ND-100R	Low-Flow Photoelectric Duct Smoke Detector w/Relay for FireWarden Series	Data Sheet
NH-100	Intelligent Addressable Thermal Detectors for FireWarden Series	Data Sheet
NI-100(A)	Intelligent Addressable Ionization Detectors for FireWarden Series	Data Sheet
NMM/NZM/NDM-100 (P)	Addressable Monitor Modules for the FireWarden Series	Data Sheet
NOT-BG12LX	Addressable Manual Pull Station for FireWarden Series	Data Sheet

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| NP-100(T)(A) | Addressable Photoelectric Detectors for FireWarden Series | Data Sheet |

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Conventional Devices

Product	Description	Documentation
1451	2-/4-Wire Ionization Smoke Detectors	Data Sheet
302 Series	Rate-Anticipation Heat Detectors	Data Sheet
30-2021 & 30-2021E	Ultraviolet Flame Detector	Data Sheet
30-2056B	Infrared Flame Detector	Data Sheet
5451	135° Fixed Temp. & Rate-of-Rise Thermal Detector	Data Sheet
5600 Series	Mechanical Heat Detectors	Data Sheet
B401BH	Conventional Base with Sounder	Data Sheet
BEAM1224(S)	Conventional Reflective Beam Detectors	Data Sheet
BNG and BRG Series	Manual Fire Alarm Stations	Data Sheet
FD Series Single UV	UV Flame Detector	Data Sheet
FD Series Triple IR	Infrared flame detector	Data Sheet
FD Series UV/IR Flame Detector	Combination UV/IR flame detector	Data Sheet
I3 Series	Photoelectric Smoke Detectors	Data Sheet
MPS-950 Series	Non-Coded Manual Fire Alarm Station (CANADA)	Data Sheet
NBG-12 Series	Non-Coded Manual Fire Alarm Pull Stations	Data Sheet
NBG-12LR(A)	Agent Release Stations	Data Sheet
NFM-950B/KB	Non-Coded Manual Fire Alarm	Data Sheet
PIBV2 and OSY2	Supervisory Switches	Data Sheet

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Notification Appliances

Product	Description	Documentation
AS and AH Series	Audible Strobe Devices	Data Sheet
CH Series	Electronic Chimes and Chime Strobes	Data Sheet
E Series	Low-Profile Speakers and Speaker Strobes	Data Sheet
ET Series	Low-Profile Speakers and Speaker Strobes	Data Sheet
Series MT	Multitone Electronic Appliances	Data Sheet
SpectrAlert Advance	Field-Selectable Mass Notification Devices	Data Sheet
SpectrAlert Advance	Indoor Selectable Output Speaker Strobes and Dual Voltage Evacuation Speakers	Data Sheet
SpectrAlert Advance	Mini-Horns MHR/MHW	Data Sheet
SpectrAlert Advance	Mini-Horns Series (Canadian)	Data Sheet
SpectrAlert Advance	Outdoor Selectable Output Speaker Strobes and Dual Voltage Evacuation Speakers	Data Sheet

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SpectrAlert Advance	Selectable Output CHR, CHW Chimes and CHSR, CHSW Chime/Strobes	Data Sheet
SpectrAlert Advance	Selectable Output Notification Appliances - Canadian	Data Sheet
SpectrAlert Advance	Selectable output notification appliances	Data Sheet
SpectrAlert Advance	Selectable output Chimes and Chime Strobes	Data Sheet
Wheelock Horn/Strobe	Wheelock NS Series horn Strobes and NH Series Horns	Data Sheet

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Products : Accessories

Browse by category :   Remote Annunciators   DACTs   Power Supplies/Battery Chargers

Remote Annunciators

Product	Description	Documentation
ONYX FirstVision	Interactive Firefighters' display	Data Sheet
ACS Series	Annunciator & Control Systems for use with the System 500 / 5000	Data Sheet
ACM-8R	Auxiliary Relay Module	Data Sheet
Conventional Relays	Multi-Voltage Conventional Relays	Data Sheet
DPI-232	The DPI-232, Direct Panel Interface, is a specialized modem for extending EIA-232 serial data links to remotely located control panels and/or peripherals.	Data Sheet
FDU-80	80 Character LCD Fire Annunciator for use with FireWarden-100	Data Sheet
LCD-160	Liquid Crystal Display for use with ONYX Series	Data Sheet
LCD2-80	LCD2-80 Liquid Crystal Display	Data Sheet
LCD-80	Liquid Crystal Display for use with the AFP-400	Data Sheet
LDM Series	Lamp Driver Modules	Data Sheet
N-ANN-80	Remote LCD annunciator for FireWarden Series	Data Sheet
NCA-2	Network Control Annunciator (UL 9th Edition Listed)	Data Sheet
ONYX Series ACS	Series Annunciators for use with the ONYX Series	Data Sheet
RA400Z(A)	Remote Annunciators for use with SFP-2402/2404	Data Sheet
RM-1	Remote Microphone	Data Sheet
UZC-256	Universal Zone Coder Software Release 2.0	Data Sheet

Digital Alarm Communicator Transmitters (DACT)

Product	Description	Documentation
IPDACT-2/2UD	FireWatch™ IP Series: IP Fire Alarm Communicator	Data Sheet
UDACT	Universal Digital Alarm Communicator Transmitter for use with NOTIFIER Intelligent Control Panels	Data Sheet
411 Series	Slave Digital Alarm Communicator Transmitters	Data Sheet
411UDAC	Fire Alarm Communicator	Data Sheet
IPGSM	IPGSM-COM - IP Internet and Digital Cellular Fire•Communicator	Data Sheet

Power Supplies, Battery Chargers, and Batteries

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Product	Description	Documentation
ACPS-610	Addressable Charger/Power Supply; Configurable for 6 amp or 10 amp output	Data Sheet
AMPS-24	Addressable Power Supply	Data Sheet
APS-6R	Auxiliary Power Supply	Data Sheet
APS2-6R	6.0 Amp Auxiliary Power Supply	Data Sheet
FCPS-24S6/8	6-Amp and 8-Amp 24-Volt Remote Power Supplies with built in horn strobe synchronization	Data Sheet
CHG-120	External Battery Charger	Data Sheet
BAT Series Batteries	or Gell Cell batteries	Data Sheet

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Products : Gas Detection

Product	Description	Documentation
F3 Point	Toxic and combustible gas monitor	Data Sheet
VA301C (Controller)	Controller for Vulcain VA201T modular gas detection network.	Data Sheet
VA301EM Expansion Module	Expansion Module featuring IR technology and up to four remote sensing points.	Data Sheet
301W	Vulcain 301W wireless gas detection network	Data Sheet
Sensepoint Pro	Comprehensive monitoring of flammable, toxic and oxygen gas hazards in potentially explosive atmospheres, both in and out of doors with intrinsically safe remote control.	Data Sheet

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http://www.notifier.com/products/gasdetection.htm

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