US-USM-931-H / 933-H

Vandal resistant wallmount substation

High
Volume

Mic Open
LED

7kHz
HD Voice

SIP /
IOIP

The Intercom solution for security-critical applications

Tamper/Weather resistant security substation connects to Commend servers via Cat 5 cable. It is used for either stanchion or security wall housing mounts, when both attractive appearance and extreme durability are important.

US-USM931H

– SIP/IOIP Substation
– Full open duplex communications
– Connects using Cat. 5 cable
– Rugged 11 gauge stainless steel faceplate
– True tamper resistant construction
– Rugged call button
– Weather resistant
– Sensitive electret microphone
– Mounts in most major stanchions and security wall housings
– Mic Open LED
– Full Supervision (speaker, microphone, station electronics, cable, network)
– Red Piezo button (US-USM931H)
– Red Mushroom button (US-USM933H)

US-USM931H-2T

– SIP/IOIP Substation
– Full open duplex communications
– Connects using Cat 5 cable
– Rugged 11 gauge stainless steel faceplate
– True tamper resistant construction
– 2 Rugged call buttons
– Weather resistant
– Sensitive electret microphone
– Mounts in most major stanchions and security wall housings
– Mic Open LED
– Full Supervision (speaker, microphone, station electronics, cable, network)
– Red Piezo Button
– Second Black Piezo button

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US-USM-931-H / 933-H
Technical specifications

Technical Data US-USM-931-H / 933-H with ET-908H Intercom Module

Operating temperature range:	–40 °C to +70 °C (–40 °F to +158 °F) [1]
Storage temperature range:	–40 °C to +70 °C (–40 °F to +158 °F) [1]
Relative Humidity:	up to 95% not condensing
Microphone input:	possibility for connection of an electret condenser microphone or a dynamic microphone electret condenser microphone: nominal –43 dB/Pa (feeding voltage: 2.5 V at 3.3 kΩ)
Loudspeaker output:	10 W at 4 Ω/6 W at 8 Ω max. 6.3 V_{eff} (volume level "11")
Ext. microphone, loudspeaker:	possibility for connection of e.g. a headset/handset EP output: max. 880 mV_{eff} (volume level "11") , R_i = 200 Ω EM input, nominal level: 14 mV on 3.3 kΩ (feeding voltage 2.5 V)
Line input:	for feed-in of audio (e.g. music, radio conference) nominal level 0 dBu (0.775 V) at 10 kΩ
Amplifier:	Built-in amplifier class "D" with 2.5 W
External LED:	possibility for connection of an RGB-LED
Inputs:	3 inputs for floating contacts (IoIP: detection of 5 input states
Outputs:	2 relay outputs (switch-over contacts) max. 60 W (DC)/37.5 VA (AC) max. 2 A max. 60 VDC/30 VAC expected life: min. 5 x 10^4 (2 A), 10^5 (1 A)
Audio bandwidth:	IoIP: 16 kHz SIP: 7 kHz
Frequency range:	50 - 16,000 Hz (depending on connected loudspeaker)
Connection:	spring clamp terminals (conductor cross-section: 0.2 – 1.5 mm2) expansion plug, e.g. for EB2E2AHE
– IP Uplink/Downlink:	shielded RJ45 modular jacks
Device class:	ES1, PS2 as per IEC/EN 62368-1 UL 62368-1 and CAN/CSA C22.2 No. 62368-1-14, Audio/video, information and communication technology
Cabling:	Cat. 5 cable;
Power supply:	24 VDC (15 – 28 VDC), max. 1 A or PoE
PoE (power over ethernet):	following IEEE 802.3af power consumption of the terminal device: 36 – 57 V, 15.4 W, Class 0 (0.44 to 12.95 W)
Protocols (IoIP):	IoIP-Protocol based on UDP/IP
Protocols (SIP):	IPv6,IPv4, TCP, UDP, HTTP (RFC 2617, RFC 3310), RTP (RFC 3550), RTCP, DHCP, SDP (RFC 2327), SIP (RFC 3261), SNMPv2, STUN, TFTP, URI (RFC 2396), DTMF Decoding (RFC 2876, RFC 2833), SIP User Agent (UDP RFC 3261), SIP Refer Method (RFC 3515)
Codecs (SIP):	G.711 a-Law, G.711 μ-Law, G.722
Data rate:	2 x 10/100 MBit/s (Full/Half Duplex) auto MDIX
Measurements:	9.56 x 11.81 see drawing page 4
Weight:	about 220 g (0.5 lbs)

[1] Temperature range for MIC 480: –20 °C to +70 °C (–4 °F to +158 °F)

Product variations US-USM-931-H

US-USM-931H-11	Red piezo call button, with Emergency in red
US-USM-931H-12	Red piezo call button, with Assistance in black
US-USM-931H-13	Red piezo call button, with Help in black
US-USM-931H-14	Black piezo call button, with Assistance in blue
US-USM-931H-15	Black piezo call button, with Assistance in black
US-USM-931H-2T-11	1 red piezo call button, with Help in red, and 1 black piezo call button with Call in black
US-USM-931H-2T-12	1 red piezo call button, with 911 in red, and 1 black piezo call button with Help in black
US-USM-931H-2T-13	1 red piezo call button, with Emergency in red, and 1 black piezo call button with Information in black
US-USM-931H-2T-14	1 red piezo call button, with Emergency in red, and 1 black piezo call button with Assistance in black
US-USM-931H-2T-15	1 red piezo call button, with 911 in red, and 1 black piezo call button with Security Information in black
US-USM-931H-ST-1	1 red piezo call button, with Emergency in red and square self testing call button,

Other buttons and text available. Please contact Commend for a custom quote.

Product variations US-USM-933-H

US-USM-933H-11	Red mushroom call button, with Emergency in red
US-USM-933H-12	Red mushroom call button, with Assistance in black
US-USM-933H-13	Red mushroom call button, with Help in black
US-USM-933H-14	Red mushroom call button, with Assistance in blue
US-USM-933HX3LED	Red mushroom button and 3 LEDs with Call Placed, Call Received and Help on the Way

Benefits

– Communication via data networks- no additional cabling required
– Crystal clear 16 kHz speech quality for optimum intelligibility
– Integration in existing housings and panels
– Connection possibilities for-
  – Microphone and loudspeaker
  – Multiple tamper resistant call buttons
  – IP-devices (IP-camera, parking terminals,etc.)
  – LED for indication of conversations
– Inputs and outputs for control and indication functions e.g. control of barriers
– Local power supply or POE (intercom module only)
– In case of a changing public IP-address, dynamic registration is possible
– Supports DSP-functionlities such as Open Duplex®, Audio Monitoring, Loudspeaker-/Microphone Surveillance, etc.
– Option boards offer additional powerful features
– Line input for feed-in of audio
– Configurable Ethernet parameters
– Easy administration via intercom server configuration

Requirements to the network for use as SIP device

Ports
– The configuration via the web interface is done via TCP port 80 (cannot be configured).
– The communication from the SIP device to the SIP server is done via the following ports (both are configurable):
  – SIP: UDP port 5060
  – RTP: UDP port 16384 (incoming)

Requirements to the network for use as IoIP device

IP addresses and ports
– For the USM 931H, the DHCP functionality is available. If DHCP is not used, the USM 931H must have a fixed IP address.
– In case of a changing public IP address, dynamic registration of the USM 931H is possible.
– Communication from the program IP Station Config is done via port 16399 (cannot be configured).
– Communication from the USM 931H to the Intercom Server (UDP protocol) is done via port 16400 (configurable).

QoS requirements
– One-way delay max. 100 ms
– Delay jitter max. 50 ms
– 0% packet loss for perfect audio quality

Bandwidth
For further information on bandwidth, see guideline "**IoIP Technology**"

Compatibility SIP PBX

Generally, the SIP device can be used with any SIP server.
The following server types have been tested explicitly by Commend and therefore a proper functionality can be confirmed:

System requirements

IoIP
Intercom Server
– GE 800 (min. PRO 800 6.3) with G8-IP (min. version 6.6A) or
– GE 300 (min. PRO 800 6.3) with G3-IP (min. version 6.6A) or
– IS 300/G8-IP-32 (min. PRO 800 6.3, min. version 6.6A) or
– S3/S6/VirtuoSIS (min. version 7.1)
Configuration software
– CCT 800 (min. version 7.1)
– IP Station Config (included in setup of CCT 800)

SIP
– Compatible SIP server or
– S3/S6/VirtuoSIS (min. version 7.1) or
– GE 800 with G8-VOIPSERV or
– Serverless operation

Device firmware
– IoIP-Device (min. version 7.2)
– SIP Series (min. version 3.8.1, build 61)

ATTENTION:

Downgrading to firmware version SIP Series 3.9 build 24 or lower is not supported.

Line length in LAN

The maximum line length of Cat. 5 cabling in a LAN is 100 m (328 ft) – e.g. from switch to Intercom station.

Manufacturer [1]	Type	Version
Cicso	Cisco Call Manager Cisco Unified Communication Manager	Versions 5, 6, 7, 8, 9
Digium	Asterisk	Versions 1.2, 1.4, 1.6
Avaya (former: Nortel)	CS1000	Version 6
Avaya	Avaya Aura™ (Avaya Communication Manager, Avaya Session Manager)	Release 6.1
Innovaphone	Virtual Appliance IPVA	Version 9 final
Alcatel	OmniPCX Enterprise (OXE)	Release 9
Siemens	Hipath 4000 Hipath 3000 + HG 1500	Version 5
3CX	3CX for Windows	3CX PhoneSystem Versions 9, 10, 11
Starface	Starface free	Versions 4.x, 5.x
Aastra (former: Ericsson)	MX-ONE	Version 4.1 SP 1
Kamailio	Kamailio (OpenSER)	Version 3.3.0
FreeSWITCH	FreeSWITCH	Version 1.1 Beta1
ELMEG	elmeg ICT880	Version 7.67D
2N®	2N® Netstar IP	Version 3.1.0.96
AVM	Fritz!Box Fon 7170 Fritz!Box Fon 7270	Version 29.04.87 Version 54.05.05
Sipgate	sipgate.de	tested in Dec 2010
Vodafone Arcor	vodafone.de	tested in Jan 2011
blue SIP	blueSIP.net	tested in May 2011
Mitel	3300ICP	12.0.0.49

[1] The listed products and company names are brand names or registered trademarks of their respective owners.

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US-USM-931-H / 933-H
Installation instructions

Precautions / Mounting Info

– When opening the stations ESD precautions must be observed.
– The stations may only be opened by authorized service engineers.
– Do not expose the station to extreme temperature (below -40 °C or above +70 °C / -40 °F to +158 °F)
– For stations to be mounted in outdoor areas, the screws must be closed with a sealing compound.
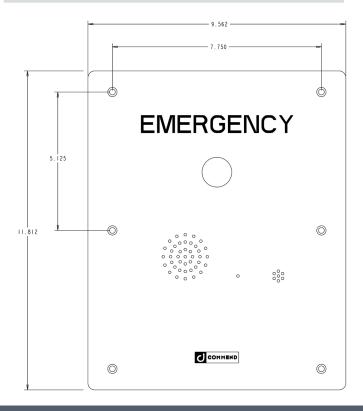
Note:
On two-button models, buttons connect with 0 and T.

All connected circuits shall fulfill the following requirements:

– Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/EN 60950-1 or
– ES1, PS2 circuits and Annex Q (Limited Power Source) according to IEC/EN/UL 62368-1
– UL 62368-1 and CAN/CSA C22.2 No. 62368-1-14, Audio/video, information and communication technology

Compatible Stanchions

US-CSH-01	Wall mounted stanchion
US-CSH-02	Wall mounted blue light stanchion
US-CSH-02A	Compact wall mounted blue light stanchion
US-CSH-03B	9' stanchion
US-CSH-04	7' stanchion
US-CSH-06F	Flush mount housing
US-CSH-06S	Surface mount housing

Extent of supply

– Intercom terminal
– Security Screws (10-24)

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