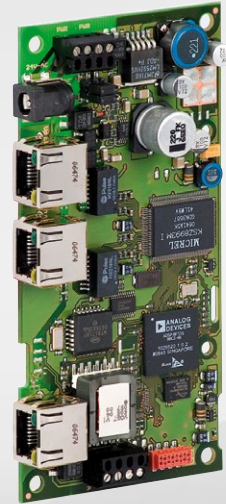# ET 901

IP Converter Box ET 901

The IP Converter Box ET 901 establishes a bridge between an Ethernet network with IP protocol and any 2-wire digital or 4-wire analogue Intercom station. There are versions for analogue and digital Intercom stations. The ET 901 is designed using the newest DSP technology, which enables features such as loudspeaker/microphone surveillance and audio monitoring for any terminal connected (both for 2-wire digital or 4-wire analogue Intercom stations). Additionally, the switch functionality allows connection of a further network device to the same Ethernet port (i.e. IP camera). The ET 901 can be upgraded with a EB2E2A to handle additional inputs and outputs. For connection to the Intercom Server, G7-DSP-IP/G2-DSP-IP or G8-IP/G3-IP cards are required, which can handle up to 8 IP subscribers each.

1. **ET 901 D**
   IP Converter Box for connection of 2-wire digital Intercom stations directly to a LAN/WAN. With switch functionality for additional connection of network devices. Housing included (IP20).

2. **ET 901HE-D**
   IP Converter PCB. The same as ET 901-D, but without housing.

3. **ET 901-A (not pictured)**
   IP Converter Box for connection of 4-wire analogue Intercom stations directly to a LAN/WAN. With switch functionality for additional connection of network devices. Housing included (IP20).

4. **ET 901HE-A (not pictured)**
   IP Converter PCB. The same as ET 901-A, but without housing.

commend

Technical Specifications – Benefits

TECHNICAL DATA

Housing:	ET 901: plastic housing, IP20
Operating temperature range:	–10 °C to +50 °C (14 °F to 122 °F)
Storage temperature range:	–20 °C to +70 °C (–4 °F to 158 °F)
Relative humidity:	up to 80 %

Connection:
- IP uplink and IP downlink and Intercom 2-wire/4-wire:
      shielded RJ45 modular jacks with LEDs
      for Intercom additional pluggable screw terminals
- Power supply: jack plug and pluggable screw terminals
- Expansion plug e.g. for EB2E2A	

Cabling:	min. Cat. 5
Power supply:	24 VAC ± 5 % or 28–35 VDC 8.4 W (if connected, EE 380 is supplied too: 18 W*) external power supply or PoE
PoE (Power over Ethernet):	IEEE 802.3af standard Power consumption of the terminal device: Class 0 (0.44 W to 12.95 W)
Protocol:	IoIP protocol based on UDP/IP
Data rate:	2 x 10/100 MBit/s (full/half duplex)
Dimensions:	*see page 4*
Weight incl. package:	ET 901: ca. 280 g (0.6 lbs) ET 901HE: ca. 230 g (0.5 lbs)

*Attention: If PoE is used, stations with the requirement of an external power supply (e.g. EE 880, EE 380) must not be supplied over the terminals C,D (→ external power supply unit required).

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 ET 901.

LINE LENGTH ET 901-A — STATION

Cable type: AWG	ø 0.5 mm 24	ø 0.6 mm 22	ø 0.8 mm 20
J-Y(ST)Y (installation cable PVC) 120 nF/km (36.6 nF/1,000 ft)	*	750 m 2,460 ft	750 m 2,460 ft
F–YAY (installation cable PVC) 100 nF/km (30.5 nF/1,000 ft)	*	900 m 2,953 ft	900 m 2,953 ft
KC102/104 (installation cable PVC) 65 nF/km (19.8 nF/1,000 ft)	1,000 m 3,281 ft	*	*
F-2YA2Y (buried cable poly- ethylene) 55 nF/km (16.8 nF/1,000 ft)	*	1,500 m 4,922 ft	1,500 m 4,922 ft
J-02YS(St)Y (Cat. 5 cable, foamed polyethylene), 45 nF/km (13.7 nF/1,000 ft)	1,000 m 3,281 ft	*	*

*...no data, as these diameters are not available for this cable type

BENEFITS

- Connection of Intercom stations over IP networks
- Communication via data networks – no additional cabling required
- Direct connection of IP cameras, parking terminals, etc.
- Capable power supply via PoE – Power over Ethernet
- In case of a changing public IP address, dynamic registration is possible
- DHCP functionality
- Supports DSP-functionalities such as OpenDuplex®, Audio Monitoring, Loudspeaker-/Microphone Surveillance, etc.
- Option boards offer additional powerful features
- Configurable Ethernet parameters
- Easy administration via central parametrization

EXTENT OF SUPPLY

ET 901: 1 IP Converter Box including
- short reference

ET 901HE: 1 IP Converter PCB including
- 8 spacers L=5 mm (0.2 in)
- short reference

A Cat. 5 cable as well as the power supply unit (if required) must be ordered separately.

Attention:
For System & Network Requirements *see page 3.*

LINE LENGTH ET 901-D — STATION

Cable type: AWG:	ø 0.5 mm 24	ø 0.6 mm 22	ø 0.8 mm 20
F-YAY (installation cable PVC) 100 nF/km (30.5 nF/1,000 ft)	*	1,100 m 3,609 ft	1,800 m 5,905 ft
J-02YS(St)Y: Cat. 5 cable, foamed polyethylene, 45 nF/km (13.7 nF/1,000ft)	750 m 2,460 ft	750 m 2,460 ft	1,800 m 5,905 ft
J-02YS(St)Y (above) with external supply	750 m 2,460 ft	1,150 m 3,773 ft	1,800 m 5,905 ft

*...no data because this diameter is not available for this cable type. The indicated line length is valid for standard stations without additional loudspeaker. If an additional loudspeaker with less than 50 Ω is used, an external power supply for the station is required.

commend

System/Network Requirements

SYSTEM REQUIREMENTS

MINIMUM REQUIREMENTS

GE 800 / GE 300:
- Intercom server software of GE 800 min. PRO 800 1.0
- Intercom server software of GE 300 min. PRO 800 1.0B
- IP subscriber card G8-IP / G3-IP

Configuration software for GE 800 min. CCT 800 1.0
Configuration software for GE 300 min. CCT 800 1.0 Build 20

GE 700 / GE 200:
- Intercom server software min. PRO 05.6
- IP subscriber card G7-DSP-IP / G2-DSP-IP

Configuration software CCT min. 5.6

IP Station Config min. version 2.0.3021

Incl. DYNAMIC REGISTRATION and DHCP

GE 800 / GE 300:
- Intercom server software for GE 800 min. PRO 800 1.0
- Intercom server software for GE 300 min. PRO 800 1.0B
- IP subscriber card G8-IP / G3-IP

Configuration software for GE 800 min. CCT 800 1.0
Configuration software for GE 300 min. CCT 800 1.0 Build 20

IP Station Config min. version 2.3.3021

Firmware min. 4.0A

GE 700 / GE 200:
- Intercom server software min. PRO 06.0
- IP subscriber card G7-DSP-IP / G2-DSP-IP
  (min. firmware 02.6 Build 01 / 03.1 Build 01)

Configuration software CCT min. 6.0

IP Station Config min. version 2.3.3021

ET 901 firmware min. 02.5 Build 01 / 03.2 Build 01

COMPATIBILITY HARDWARE — FIRMWARE

"New" hardware generation:
- ET 901-A/D min. Rev. AG
- ET 901 HE-A min. Rev. AB
- ET 901 HE-D min. Rev. AC

For the "new" ET 901 hardware generation, firmware with a **minimum version of 03.x** is required (firmware 02.x **not** compatible)!

The ET 901 hardware generation with **firmware 02.x** is **not supported for use with VirtuoSIS.**

REQUIREMENTS OF THE NETWORK

IP addresses and ports
- For the ET 901, the DHCP functionality is available.
  If DHCP is not used, the ET 901 must have a fixed IP address.
- In case of a changing public IP address, dynamic registration of an ET 901 is possible.
- Communication from the software IP Station Config is done via Port 16399 (cannot be configured).
- The communication from the ET 901 to the Intercom Server (UDP protocol) is done via port 16400 (can be configured).
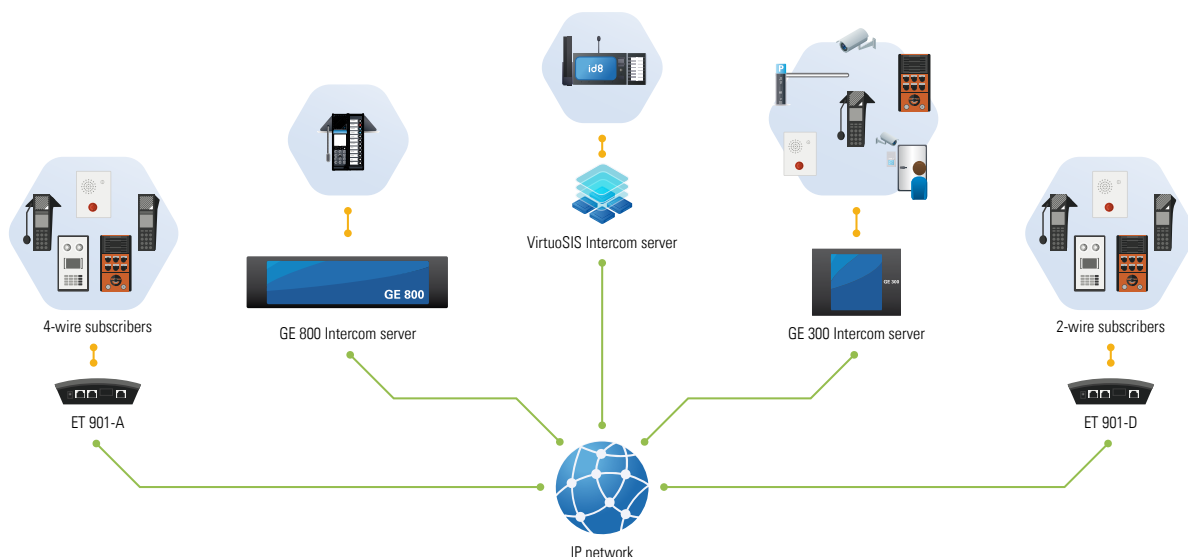
QoS requirements
- Maximum one-way delay 100 ms
- Delay jitter not above 50 ms
- 0% packet loss for perfect audio quality

Bandwidth
- Required bandwidth incl. protocol overhead per ET 901, for upload/download each: 96 kBit/s (speech and data)
- Speech is compressed according to G.722 standard

SYSTEM OVERVIEW

The following diagram shows an example of how Intercom stations can be connected via IP network:

4-wire subscribers

GE 800 Intercom server

VirtuoSIS Intercom server

GE 300 Intercom server

2-wire subscribers
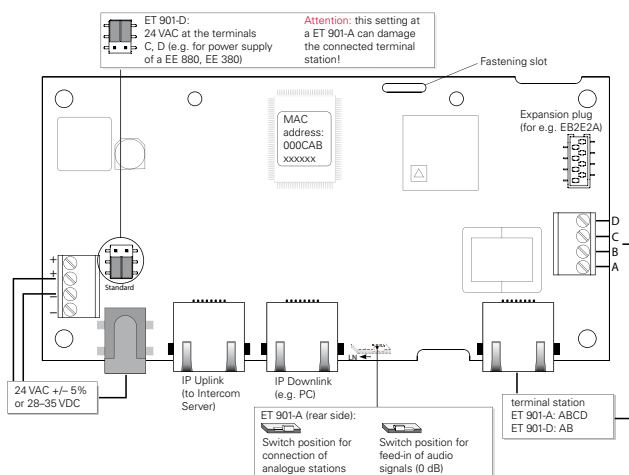
ET 901-A

ET 901-D

IP network

commend

Installation

PRECAUTIONS

- The ET 706 is not compatible with the ET 901-D / ET 901HE-D!
- Observe the precautions for handling of electrostatic sensitive devices!
- This device must be installed or replaced by trained and qualified personnel only.

CONNECTION

Because of the switch function, up to **20 ET 901** can be linked **in series** (or other IP devices, e.g. PC).

Attention – Use of PoE:

- If multiple ET 901 are connected in series, then only the 1st device can be supplied with power over Ethernet. All other devices (connected in series) must be supplied separately by an external power supply unit.
- Stations with requirement for an external power supply (e.g. EE 880, EE 380) must not be supplied over the terminals C,D via PoE – for this, an external power supply unit is required.
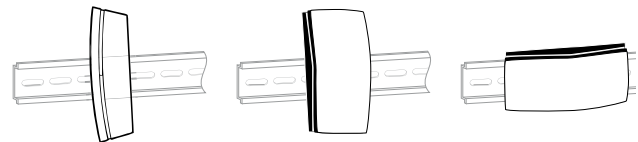
Note: When using a device with direct dialling buttons (e.g. EE 380A or EE 8000), the ET 901 cannot be upgraded with the option board EB2E2A, as the internal expansion bus is used by the direct dialling button modules.
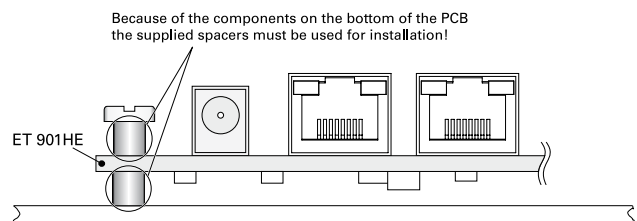
INSTALLATION ET 901

The ET 901 can be mounted in a rack with the top-hat rail clamp ET 901-HSH35 (not in extent of supply):

With this rail clamp, the housing of the IP Converter Box can be installed upright or flat onto the rail in a vertical or horizontal position.
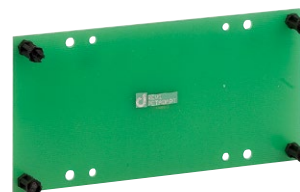

MOUNTING ET 901HE

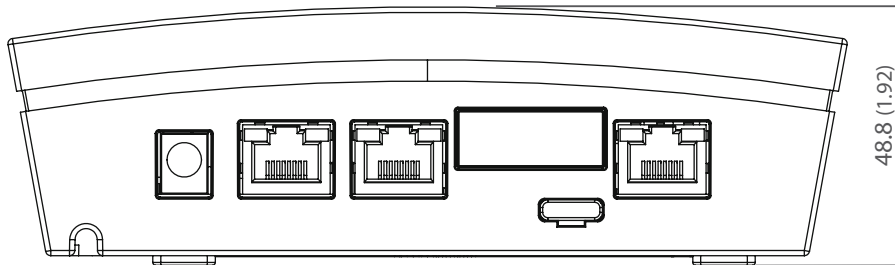|	
Spacer height:	5 mm (0.2 in)
Inner diameter:	4.5 mm (0.18 in)
Outer diameter:	8 mm (0.31 in)

For mounting the ET 901HE when there is an existing installation, the adapter print ETADAPT is available (not in extent of supply).
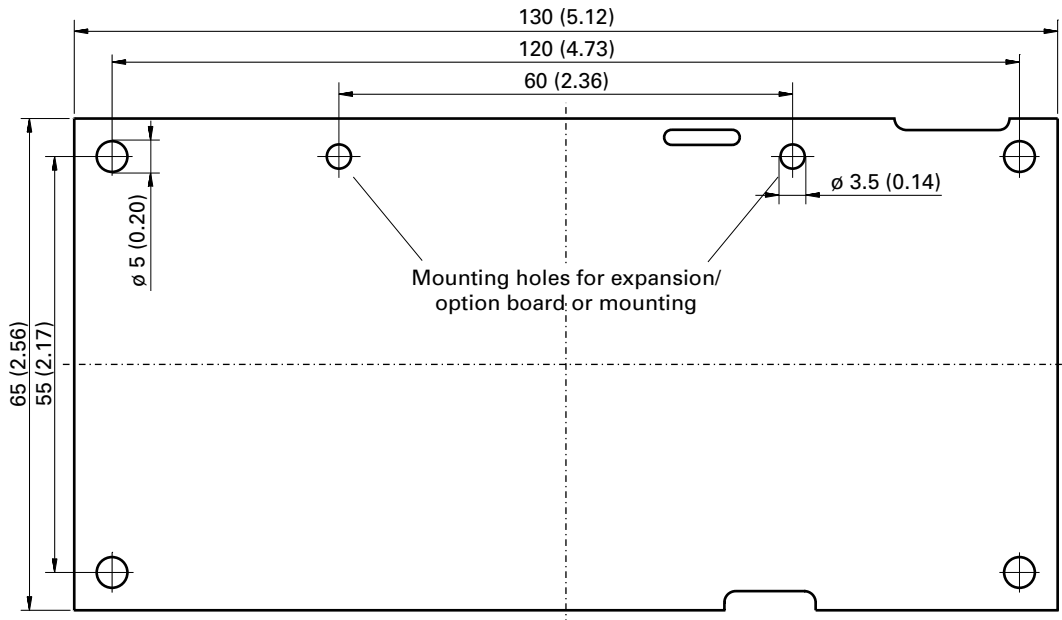
Installation

DIMENSIONS ET 901

Dimensions in mm (in), not to scale!

48.8 (1.92)

77.8 (3.06)

158.5 (6.24)

commend

Installation

DIMENSIONS ET 901HE

Dimensions in mm (in), not to scale!

130 (5.12)
120 (4.73)
60 (2.36)
ø 5 (0.20)
ø 3.5 (0.14)
65 (2.56)
55 (2.17)

Mounting holes for expansion/
option board or mounting

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A STRONG WORLDWIDE NETWORK

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