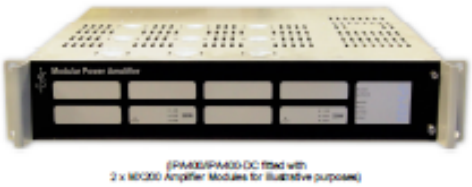
iPA400/iPA400-DC
Intelligent 400W PA Amplifier Main-



The iPA400/iPA400-DC Intelligent Public Address Amplifier Mainframe is a 2U rack mount unit which combines amplification, routing, and Ethernet connectivity. The iPA400 operates with a 230 V AC mains supply, and the iPA400-DC operates with dual power supplies: a 230 V AC mains supply and/or a 24 V DC battery supply. Amplification is provided by high efficiency and low quiescent current modular amplifiers using ASL proprietary Adaptive Class D technology, whilst Voice over IP and Digital Voice announcement are provided by an embedded controller supporting the ASL VIPA software suite.

The iPA400/iPA400-DC can be fitted with the ASL MX series 100 V PA/VA amplifier modules in any of the following standard combinations: 4 x 100 W, 2 x 200 W, 1 x 400 W, or 1 x 200 W + 2 x 100 W. The amplifier modules are inserted from the front of the mainframe, and are protected by a removable front panel.

Two multifunction audio input and serial I/O ports enable the connection of any of ASL's general paging microphones, the ASL BMB01 Remote I/O Unit, or other audio sources. The BMB01 unit in turn enables the connection of ASL Ambient Noise Sensors and remote control units, and also provides flexible general purpose analogue and digital I/O connectivity. Microphones connected to these ports can be configured for paging and DVA routing locally at the host iPA400/iPA400-DC, or elsewhere over the network.

The iPA400/iPA400-DC can be controlled from an ASL or third party workstation in the IP network, or can have a directly connected monitor, mouse and keyboard, or touchscreen.

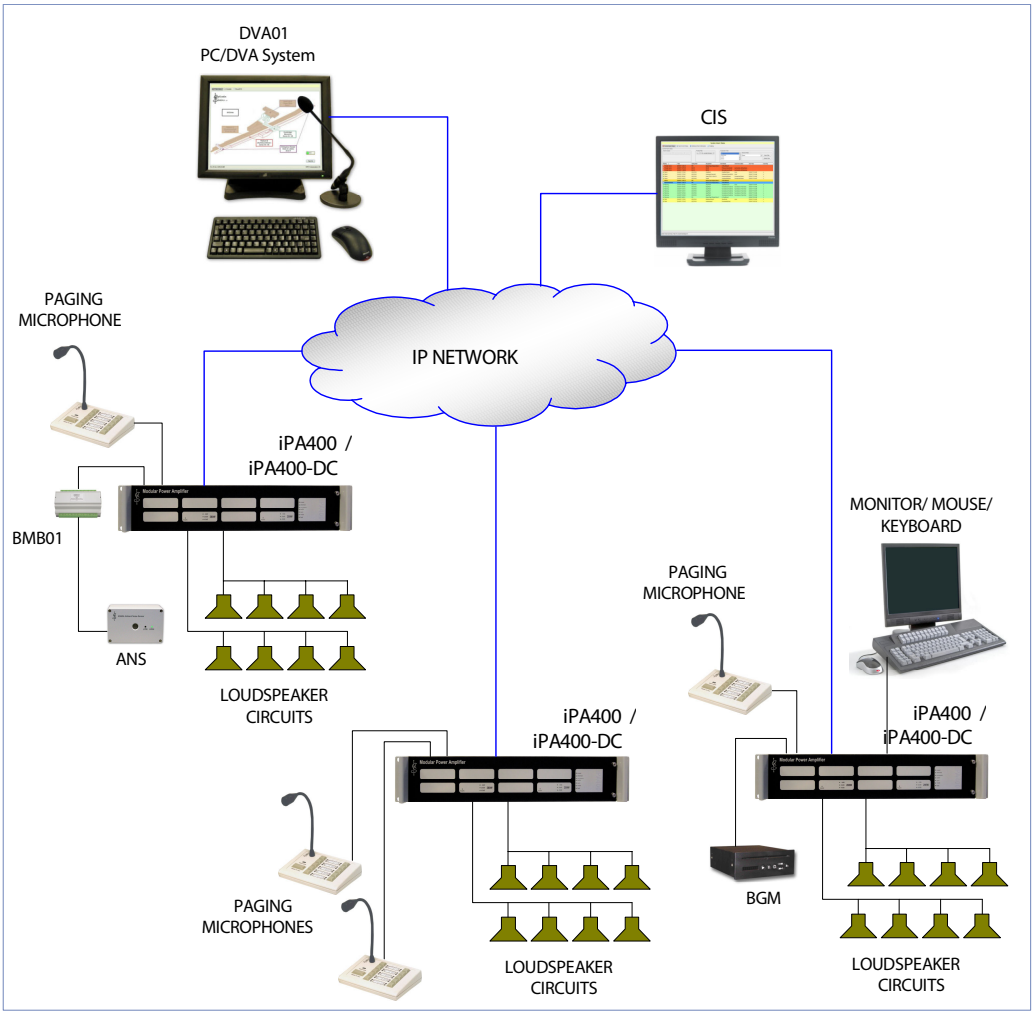
The base iPA400/iPA400-DC VIPA software1 set includes:
Operating System, Voice over IP, PC/DVA back end, interfaces to ASL microphones and IP interfaces for control and fault reporting.

iPA400/iPA400-DC units can be configured to run as stand-alone units or in a network. They support full peer-to-peer IP communications for both voice and control. This provides an IP enabled distributed operating platform for ASL software and other applications, with connectivity, control, and monitoring functions.

ASL's Voice over IP solution allows the audio outputs of the iPA400/iPA400-DC units to be synchronised across the network, and allows the use of both high and low bandwidth codecs as appropriate to the application.

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

Application Diagram



IPA400/iPA400-DC[1]

General

Supply Voltage ..... 230 V +/–10% RMS 50Hz AC / IEC320 inlet
European standard
Inrush Current (worst case) ..... 24.2 A
Maximum AC Power Consumption ..... 745 VA
(mainframe fully configured and all amplifier modules delivering
100 V 1 kHz sinewave into rated resistive loads)
Internal Lithium Battery ..... DURACELL CR2032 or equivalent
Standard Configurations[2] ..... 1 x MX400 400 W Amplifier Module
2 x MX200 200 W Amplifier Module
4 x MX100 100 W Amplifier Modules
1 x 200 W + 2 x 100 W Amplifier Modules
(no standby amplifier provision)
Format ..... 2U 19-inch rack mounting metal frame
Colour ..... black front panel with silver annotation
Temperature Range (storage and operating) ..... –5°C to +50°C
Humidity Range ..... 0% to 93% non-condensing
Ingress Protection IP20
Vibration/Impact EN60068-2-6/EN60068-2-75
Dimensions (H x W x D) (mm) ..... 86 x 439 x 425 (excl. handles)
Weight ..... 12 kg (frame only)
18.4 kg (max, frame fitted with 4 x MX100)

External Interfaces[3]

100 V Line Outputs ..... able to drive single loudspeaker circuits
(2-way pluggable Wago cage clamp terminal block)
Microphone/Audio/Data Port[4] ..... 2 x ports
Audio Input ..... balanced 0 dBu/10 k□□-20 dBu max. sensitivity
Auxiliary DC Supply Output ..... 28 – 36 V (500 mA max)
Serial Interface ..... EIA RS485
Connection ..... 8-way pluggable Wago cage clamp terminal block
Compatible with ASL paging microphones and BMB01 unit[5]
Audio I/O Expansion Module (optional)[6]
Audio Inputs ..... 2 x balanced 0 dBu / 14 kΩ impedance
(3-way pluggable Wago cage clamp terminal block)
Audio Outputs ..... 4 x 0 dBu low level outputs
(3-way pluggable Wago cage clamp terminal block)
Serial Port ..... 1 x RS232 (9-way standard D connector)[7]
Ethernet Port ..... 1 x 100BASE-T Ethernet (RJ45 socket)
USB Port ..... 2 x USB 2.0 (USB type A socket)
VGA Port ..... 1 x standard VGA port (15-way HD D connector)

1 ASL amplifiers on 230 V mains power can produce full output, with normal programme material, into loads 25% greater than those specified. In these conditions, a MX100 will deliver full output with 125 W of load connected, a MX200 will deliver full output with 250 W of load connected, and a MX400 will deliver full output with 500 W of load connected.

2 The mainframe is fully populated in the standard configurations. However the mainframe does not need to be fully populated with amplifiers, for example three MX100 amplifiers could be fitted, or a single MX200 amplifier.

3 All located on the rear panel of the iPA400/iPA400-DC.

4 Each port can support either an ASL microphone, or a BMB01 unit, or another audio source, or a BMB01 unit and another audio source. Note that one port cannot support an ASL microphone and a BMB01 unit at the same time.

5 Up to nine BMB01 units can be configured on each port.
ANS sensors can be configured on different BMB01 units provided that the BMB01 units are connected to the same input port of the iPA400/iPA400-DC. Up to twelve ANS sensors can be configured on each BMB01 unit. Any number of ANS sensors configured on the iPA400/iPA400-DC can be assigned for each amplifier.

6 Future options: Auxiliary Control Module providing either GSM-R (Global System for Mobile communications – Railway) interface, or DTMF (Dual-Tone Multi-Frequency) interface.

7 RS232 Port is duplicated on front of the iPA400/iPA400-DC behind the removable front panel.

iPA400-DC only

DC Supply Voltage ..... 21 to 27.6 V (7W2 mixed signal D connector)
(from nominal 24 V lead acid battery pack)
Quiescent DC Current (no amplifiers, @ 24 V supply) ..... 460 mA
Maximum DC Current Consumption ..... 6.25 A per 1 x MX100
12.5 A per 1 x MX200
25 A per 1 x MX400
(21 V supply, modules delivering 100 V 1 kHz sinewave
into rated resistive loads)
Auxiliary DC Supply Output ..... 21 V to 38 V[8] / T1A fuse
(2-way pluggable Wago cage clamp terminal block)

MX100

Output Power ..... 100 W @ 100 V RMS[1]
Output Voltage and Input Sensitivity ..... 100 V RMS
into 100 Ω load for 0 dBu 1 kHz input signal
Regulation ..... no load to full load, better than 1.5 dB
Efficiency 80%
Quiescent Current (no signal, @ 24 V supply) ..... 70 mA
Quiescent Current ..... 140 mA (nominal)
with typical surveillance signal, @ 24 V supply
Frequency Response ..... 100 Hz – 18 kHz, ±3 dB
THD (@ 100 V RMS output, full load) ..... <0.5% @ 1 kHz
Residual Noise ..... better than 80 dB (A-weighted) below full output
Dimensions (H x W x D) (mm) ..... 79 x 79 x 273 (incl. connectors)
Weight ..... 1.6 kg

MX200

Output Power ..... 200 W @ 100 V RMS[1]
Output Voltage and Input Sensitivity ..... 100 V RMS
into 50 Ω load for 0 dBu 1 kHz input signal
Regulation ..... no load to full load, better than 1.5 dB
Efficiency 80%
Quiescent Current (no signal, @ 24 V supply) ..... 70 mA
Quiescent Current ..... 140 mA (nominal)
with typical surveillance signal, @ 24 V supply
Frequency Response ..... 100 Hz – 18 kHz, ±3 dB
THD (@ 100 V RMS output, full load) ..... <0.5% @ 1 kHz
Residual Noise ..... better than 80 dB (A-weighted) below full output
Dimensions (H x W x D) (mm) ..... 79 x 159 x 273 (incl. connectors)
Weight ..... 2.7 kg

MX400

Output Power ..... 400 W @ 100 V RMS[1]
Output Voltage and Input Sensitivity ..... 100 V RMS
into 25 Ω load for 0 dBu 1 kHz input signal
Regulation ..... no load to full load, better than 1.5 dB
Efficiency 80%
Quiescent Current (no signal, @ 24 V supply) ..... 90 mA
Quiescent Current ..... 150 mA (nominal)
with typical surveillance signal, @ 24 V supply
Frequency Response ..... 100 Hz – 18 kHz, ±3 dB
THD (@ 100 V RMS output, full load) ..... <0.5% @ 1 kHz
Residual Noise ..... better than 80 dB (A-weighted) below full output
Dimensions (H x W x D) (mm) ..... 79 x 316 x 273 (incl. connectors)
Weight ..... 4.9 kg

8 Depending on AC or DC supply, and battery conditions.

CE This equipment is designed and manufactured to conform to the following EC standards:

EMC: EN61000-6-4:2007, EN61000-6-2:2005, EN55103-1/E1:1997, EN55103-2/E5:1997, EN50121-4:2006, ENV50204:1996

Safety: EN 60065:2002

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