



the emerging preference

AC3601

monitoring and changeover

6 DUTY / 1 STANDBY MANUAL AMP CHANGEOVER

Standby amplifier is normally required for a continuous and uninterrupted operation of a PA system in the event that any of the duty pack fails. A panel is required for the standby unit to take over a duty amp without having to change the input connection or redo the cabling works.

Amperes AC3601 is a changeover panel for 6 duty with 1 standby amplifier but is expandable for a single standby unit to cater for more than 6 duty packs.

Protection circuitry is embedded that only allowed a failed duty amplifier to be taken over by standby unit to prevent overloading. Priority features shall ensure higher numbered failed unit has preference for changeover.

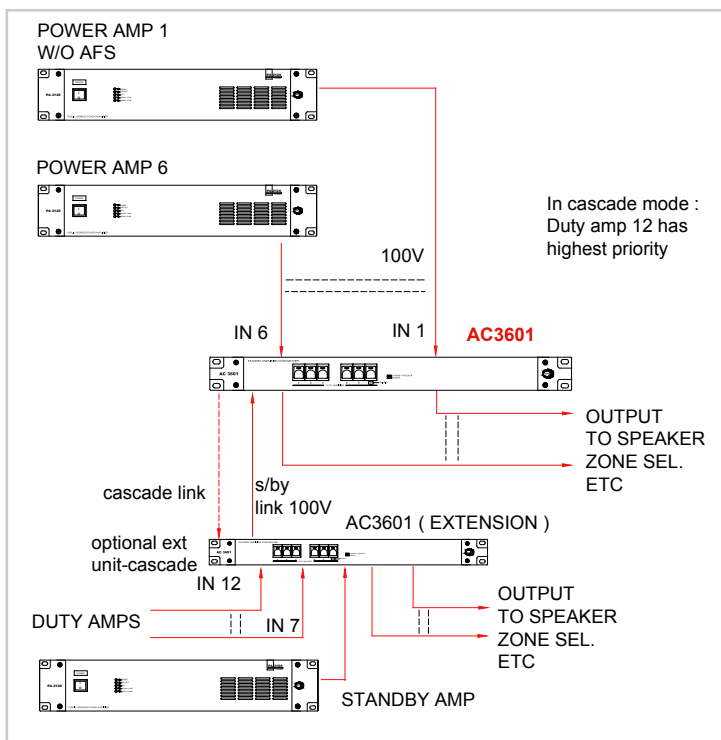


Product Options :

AX700
6 duty / 1 standby auto changeover panel to be used with Amperes AS4000

AX3700
6 duty / 1 standby auto fault changeover unit with self generated Pilot Tone and switch over for inputs and outputs.

Application Schematic

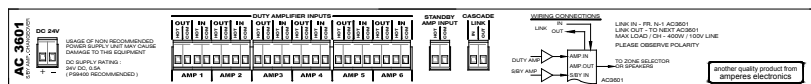


Features

- Cater for 6 duty and 1 standby amplifier
- Expandable for 1 standby to serve more than 6 duty units
- Overload protection by allowing only a single take over
- Prioritized changeover - unit with higher number is preferred for changeover
- Manual front panel changeover selection

Specifications

Operating voltage	24V DC via PS9400 PSU
Power consumption	Standby : 82 mW, 3.4 A Operating : 1.3 W, 50 mA
Zone load rating	400 W / 100V line per ch.
Amplifier inputs	6 duty / 1 standby
Changeover indication	Front switch LED
Switching mode	Via front panel switch
Cable connection	Plug in connectors
Cable size	2.5 mm sq
Dimensions (WxHxD)	482 x 44 x 130 mm
Weight	1.6 kg



rear view



packing information

Carton : 540(W) x 105(H) x 270(D) mm
Weight : 2.05 kg
Qty : 1 units / carton



AM6000 shall be used to monitor the condition of amplifier outputs of 70 / 100V line at the rack which is equipped with level meter, amplifier output LED and speaker for audio monitoring. It can also be used as a tool to calibrate sound output level of each amplifier from the rack.



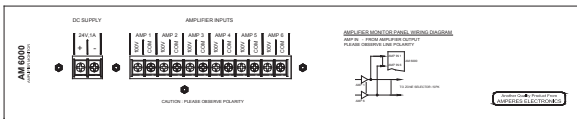
FEATURES

- 6 inputs for 70 / 100 V line amplifier outputs
- Dual mode monitoring with continuous signal indicator
- Audio monitoring with volume control

TECHNICAL SPECIFICATIONS

Operating voltage	24V DC via PS9400 PSU
Power consumption	50 mW
Amplifier inputs	6 : 70 / 100V line
Monitoring mode	Audio : 1 W speaker with 5 presets Visual : 9 segment LED level meter LED for all channels
Dimensions (WxHxD)	482 x 88 x 130 mm
Weight	2.3 kg

rear view



packing information

- Carton : 555(W) x 165(H) x 295(D) mm
- Weight : 3.1 kg
- Qty : 1 units / carton

AS4000

Amplifier Surveillance Module



AS4000 is used to monitor the status of 70 / 100 V line power amplifiers which do not have built in detection module. Every amplifier shall employ one AS4000 and the dry contact output from the unit shall then be connected to Amperes AX700. Repeating this link shall then form an automatic amplifier fault changeover / surveillance system.

FEATURES

- Interval Pilot Tone injection ; reduces strain to amplifiers
- Works independently with or without availability of audio signal
- Low distortion to original audio signal
- Status monitoring via LED ; Pilot Tone and amplifier fault
- Compatible with most 70 / 100 V line amplifiers in the market

TECHNICAL SPECIFICATIONS

Operating voltage	24V DC via PS9400 PSU
Power consumption	200 mW nominal
Input impedance	10 K balanced
Output impedance	600 Ohm balanced
Max audio input	0.75 V
Max audio output	1.2 V
Transmit interval	10 seconds
Detection delay	20 seconds
Recovery time	30 seconds
Frequency response	20 - 20 KHz
Detection output	NO and NC dry contact
Dimensions (WxHxD)	120 x 96 x 28 mm
Weight	330 gms

APPLICATION SCHEMATIC

Please refer to schematic in AX700 ; " Application with AS4000 amplifier surveillance module "

AX3700

6 Duty / 1 Standby Auto Amplifier Changeover Panel

AUTO AMPLIFIER CHANGEOVER



Amperes AX3700 offers a great flexibility and simplicity in cabling for auto amplifier fault changeover system with its combination of amplifier fault sensor modules and changeover panel in a box. The internally generated Pilot Tone and sensory circuit shall detect any faulty duty amplifier and would initiate a changeover process.

AX3700 has been optimised for faster fault detection and changeover as compared with AS4000 modules. Pilot tones are generated at intervals to avoid constant loading of power amplifiers.

Changeover are performed at both input and output sections, making it suitable for application in a matrix system. At any one time, only a failed duty unit shall be replaced by a standby amp, to avoid overloading.



AMPLIFIER CHANGEOVER & MONITORING

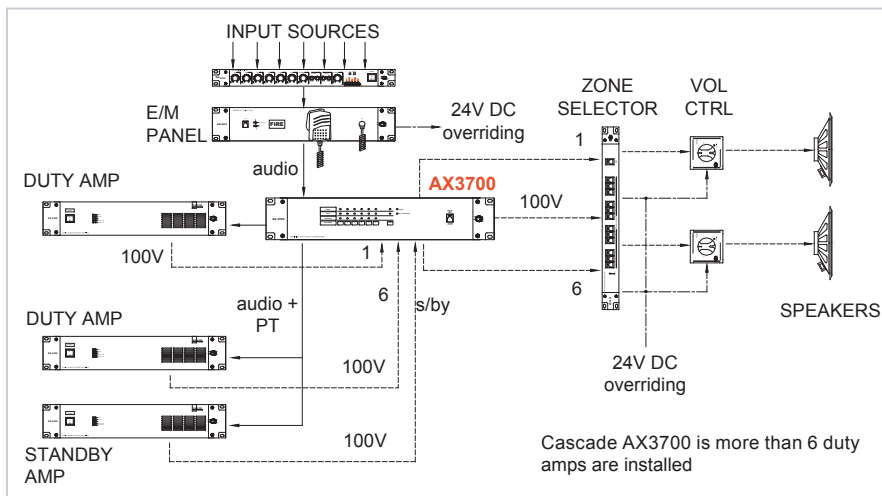
FEATURES

- Cater for 6 duty and 1 standby
- Expandable for 1 standby to cater for more than 6 duty amps.
- Built in Pilot Tone generator, transmit at intervals and senses at sequence to protect amplifiers
- Overloading protection by allowing only a single take over
- Prioritised changeover which higher numbered amplifier shall be preferred for take over if more than two units are down
- Shorter fault detection time from 10 to 25 seconds
- Changeover at input and output section simultaneously ; suitable for matrix system installations
- Input link switch ; making connection of sources easier
- Channel isolation switch for unused or un-monitored channel
- Individual channel status indicators ; normal, fault and changeover

TECHNICAL SPECIFICATIONS

Operating voltage	24V DC 1 A via PS9400 PSU
Power consumption	7.2 W
Input signal	6 ch. balanced line signal
Input impedance	10 K Ohm
Audio output gain	Unity
Pilot tone interval	10 secs / channel
Pilot tone frequency	20 KHz (+/- 5%)
Detection line	70 / 100 V line
Detection level	50 V rms
Failure detection time	10 ~ 25 seconds
Failure recovery time	20 seconds max
Zone load rating	400W / 100V line
Status indications	Normal ; Fault ; Changeover
Changeover alert	Buzzer with switch
Changeover section	Input and Output simultaneously
Dimensions (WxD)	482 x 88 x 150 mm
Weight	3.4 kg

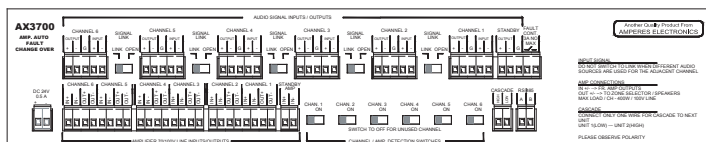
APPLICATION SCHEMATIC



packing information

Carton	: 555 (W) x 165 (H) x 295 (D) mm
Weight	: 4.2 kg
Qty	: 1 units / carton

rear view



AX700

6 Duty / 1 Standby Amplifier Changeover Panel

AUTO AMPLIFIER CHANGEOVER



AMPLIFIER CHANGEOVER & MONITORING

AX700 is a platform for standby amplifier to take over failed duty unit in an automated changeover setup. Each unit caters for 6 duty and 1 standby amplifier but expandable to larger setup with a single standby power pack.

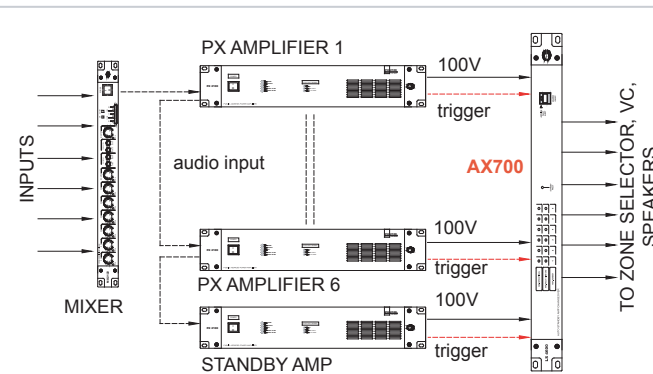
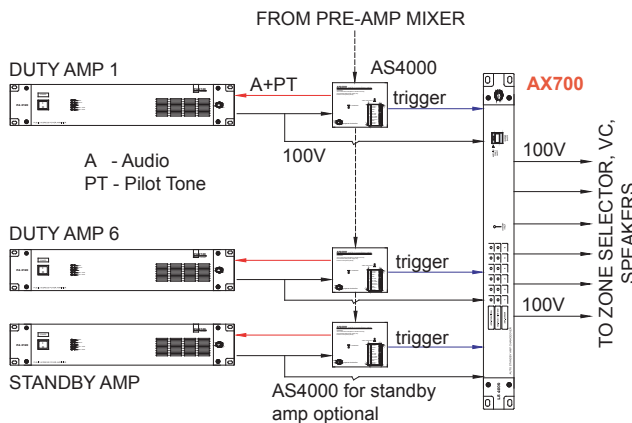
It shall be used with amplifiers with auto fault sensing (AFS) such as PX series and whereas normal amplifiers are used, Amperes AS4000 shall be installed at every duty unit. In such case, we recommend that Amperes AX3700 to be used instead.

AX700 has protection features that only allow a single takeover to prevent overloading.



APPLICATION SCHEMATIC

Application with AS4000 amplifier surveillance module



cascade AX700 if required

Application using PX series of amplifiers with AFS

FEATURES

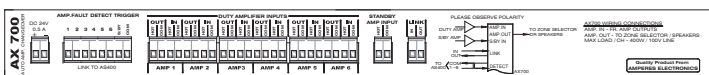
- Cater for 6 duty and 1 standby amplifier
- Expandable for 1 standby to serve more than 6 duty units
- Overload protection by allowing only a single take over
- Prioritized changeover - unit with higher number is preferred for changeover
- Fault alert with LED indicator and switchable buzzer
- Compatible with most auto detection cards

TECHNICAL SPECIFICATIONS

Operating voltage	24V DC via PS9400 PSU
Power consumption	Standby : 82 mW, 3.4 A Operating : 1.3 W, 50 mA
Zone load rating	400 W / 100V line per ch.
Amplifier inputs	6 duty / 1 standby
Indications	Red LED for takeover Green - normal / non c/over
Switching mode	Dry contact activation by AS4000 / other contacts
Changeover alert	Buzzer, LED
Changeover section	Amplifier outputs only
Cable connection	Plug in connectors
Cable size	2.5 mm sq
Dimensions (WxHxD)	482 x 44 x 130 mm
Weight	2.0 kg

packing information

Carton	: 555 (W) x 95 (H) x 295 (D) mm
Weight	: 2.60 kg
Qty	: 1 units / carton



rear view



LS4600 monitors the condition of speaker line for faults such as ground leakage, short circuit and open circuit. It employs impedance measurement method with detection tone, and this would eliminate the use of blocking capacitors and resistors in the speaker network. Upon detection of flaws, it would provide fault alert via LED indications and buzzer.

This improved LS4600 (version 2) has wider detection range as compared to its predecessor, from 10 Ohm to 10 KOhm. Other added features included are two level of detection setup - basic and advance, circuit fault disconnection option, improved accuracy and stability.

FEATURES

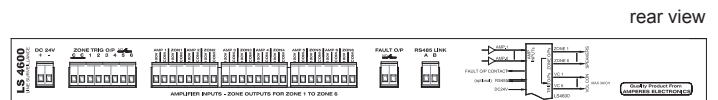
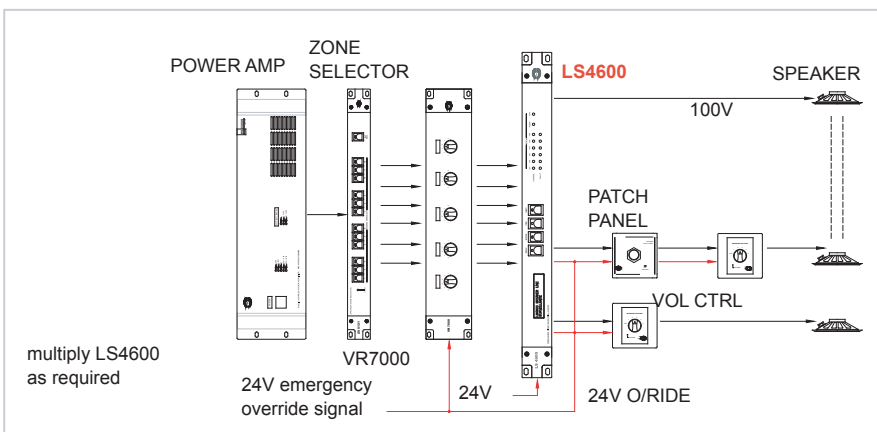
- 6 channel speaker line monitoring and expandable
- Basic and Advance level of detection setup
- Detection of faulty cable and speaker in individual zone or circuit
- Impedance measurement method - no capacitor coupling required and cable branching allowed.
- Faulty circuit disconnection option
- Built in impedance meter, range within 10 Ohm to 10 KOhm
- LCD display to facilitate system setup, measurement and monitoring
- Fault alert with LED indicators and switchable buzzer
- Detection test interval setting from 1 min to 48 hours
- Short burst test signal, minimizing interruption to PA operation
- User setting for detection sensitivity for open, short and leakage
- Aux 24V DC output for volume controller overriding during testing mode

TECHNICAL SPECIFICATIONS

Operating voltage	24V DC via PS9400 PSU
Power consumption	3.5 W
Capacity	6 channel and expandable
Processor	PIC microcontroller with 12 bit ADC
Impedance detection range	10 to 10 K Ohm
Power measurement range	3 to 1000 W 100V line
Measurement accuracy	+/- 3% within range
Pilot tone injection frequency	1 KHz
Pilot tone signal output level	5V sine
Transmittal detection period	3 seconds per channel
Detection interval	User preset from 1 min to 48 hrs
Sensitivity setting	User preset at each channel
Indicators - LED	Normal, Fault, Buzzer, Auto run
Display LCD	2 x 16 characters sigh back light setting
Audible output signal	Continuous buzzer with Off option
Dry contact setting	3A
DC output in detection mode	24 V DC for individual channel
Dimensions (WxHxD)	482 x 44 x 130 mm
Weight	2.3 kg

AMPLIFIER CHANGEOVER & MONITORING

APPLICATION SCHEMATIC



packing information

Carton : 555(W) x 165(H) x 295(D) mm
 Weight : 2.9 kg
 Qty : 1 units / carton