MODELS 6416 AND 6416-S

BACKUP POWER AMPLIFIER SWITCHING SYSTEMS

The Model 6416 Backup Power Amplifier Switching System is a component of the IED 6000 Series Power Amplifier System. It is designed to switch into place from one to four backup power amplifiers.

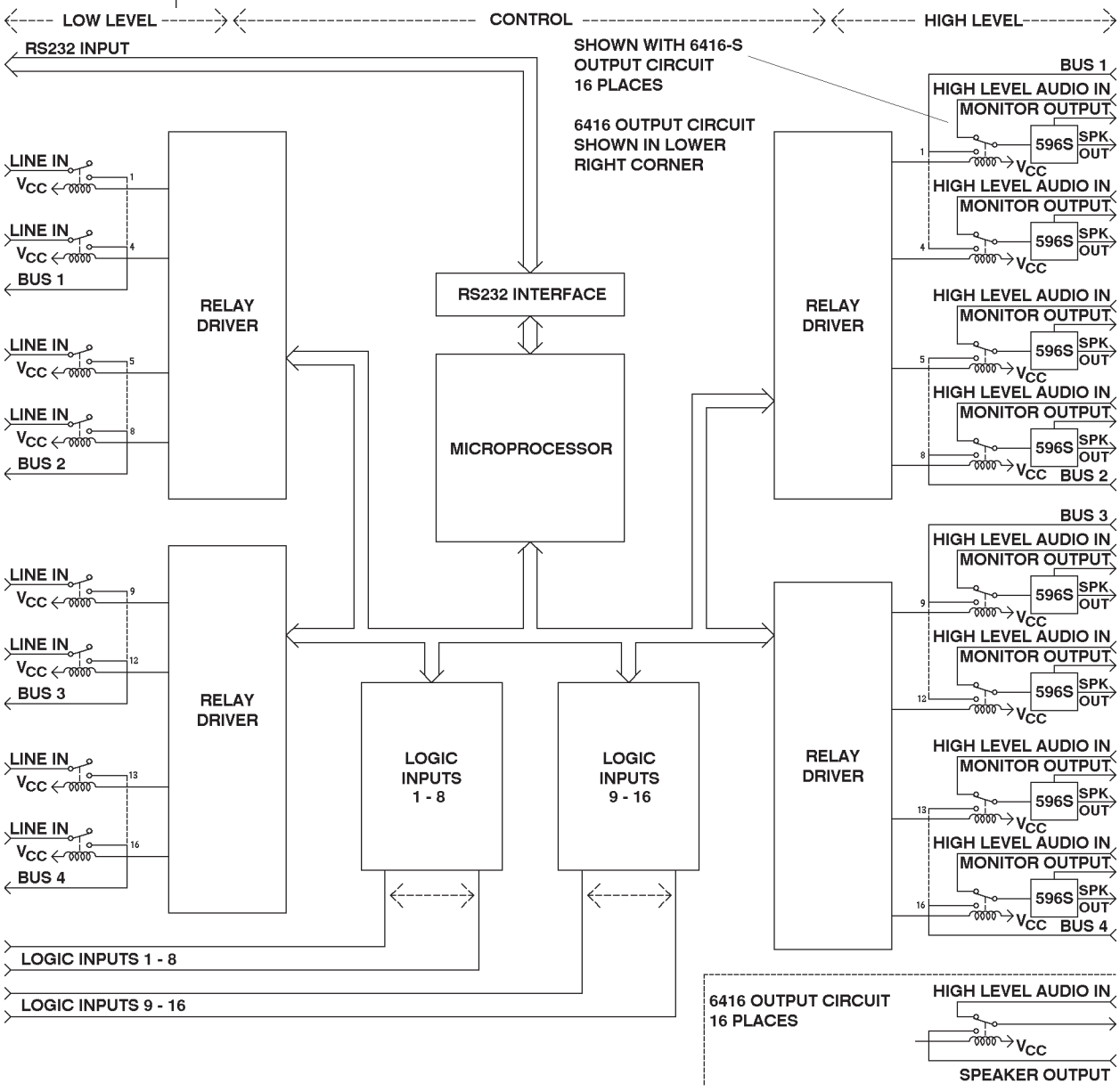

Figure 1 - Models 6416 and 6416-S Power Amplifier Switching Systems

The 6416 and 6416-S are partitioned into three sections, a low level section, a control section, and a high level section. The low level section switches the line level audio signals, and the high level section switches the high voltage and high current output signals.

The low level section has 16 balanced audio inputs. The line level inputs are routed to the common terminal of the low level, two pole form C relays for switching balanced audio signals. The line inputs must also be wired to the main amplifier inputs such that test tone signals can always be routed to the main amplifiers, even under power amplifier fault conditions. The normally open terminals of the relay are routed to the external bus terminals for wiring to the inputs of the backup power amplifiers.

The 6416 and 6416-S include four low level backup audio buses. The first backup bus switches the first set of four inputs. The second backup bus switches the second set of four inputs. The third backup bus switches the third set of four inputs. The fourth backup bus switches the fourth set of four inputs. The backup structure can be configured by a DIP switch located inside the unit.

The buses can be connected together in any combination, depending upon the backup requirements. For example, if buses 1 and 2 are connected together, and buses 3 and 4 are left separate, there would be a backup bus for the first eight inputs and outputs, a backup bus for inputs and outputs nine to twelve, and a backup bus for inputs and outputs thirteen to sixteen.

The 6416 and 6416-S include four high voltage, high current backup amplifier output buses. The first bus switches a backup amplifier output to any one of the first set of four speaker outputs. The second bus switches a backup amplifier output to any one of the second set of four speaker outputs. The third bus switches a backup amplifier output to any one of the third set of four speaker outputs. The fourth bus switches a backup amplifier output to any one of the fourth set of four speaker outputs. Any of the buses can be connected together to form different combinations.

Like the input buses, the output buses can be connected together in any combination, depending upon the backup requirements, but the output and input bus combinations must be the same for the input and output switching to function properly.

The Model 6416-S includes sixteen 596S Speaker Circuit Sensor modules, one in series with each speaker output line. The purpose of the 596S modules is to monitor the integrity of the speaker circuit. When a backup amplifier is switched in by the 6416-S, its output is connected to the 596S module which was used by the amplifier which it replaces, so that backup amplifiers will also have speaker circuit integrity monitoring. The outputs of the 596Ss are available through terminals at the rear of the mainframe.

The Model 6416 differs from the Model 6416-S in that it does not include the 596S Speaker Circuit Sensor modules. It is identical in all other respects.

A microprocessor reads the 16 logic inputs and sets the appropriate configuration of the low and high level relays. An RS232, RS422, or RS485 serial interface is provided for direct computer configuration and changes if the system configuration requires it.

SPECIFICATIONS

ELECTRICAL, V_S = +24 VDC

1. Low Level Relay Contacts, Maximum Current
   - Supply voltage = 120 VAC . . . . . 0.5 A
   - Supply voltage = 24 VDC . . . . . 1.0 A
   - Supply voltage = 60 VDC . . . . . 0.3 A
2. High Level Relay Contacts, Maximum Current
   - Supply voltage = 240 VAC . . . . . 5.0 A
   - Supply voltage = 30 VDC . . . . . 5.0 A
3. Power Supply
   - Supply Voltage Range . . . . . +23.5 V to +24.5 V
   - Supply Current, Max.
     - V = +24 V . . . . . 500 mA

INDICATORS

1. Power On . . . . . Green LED
2. Relay Energized (32 LEDs) . . . . . Green LED
   On each for low level and high level relays

CONNECTORS

1. Low Level Inputs and Outputs . . . . . Phoenix 1803675
   12 position plug-in lugless compression-type screw terminal connectors
2. High Level Inputs and Outputs . . . . . Phoenix 1757077
   8 position plug-in lugless compression-type screw terminal connectors
3. Logic Inputs . . . . . Phoenix 1803646
   9 position plug-in lugless compression-type screw terminal connectors
4. Power . . . . . Phoenix 1757022
   Plug-in lugless compression-type screw terminal connectors
3. Serial Communication . . . . . 9-pin Sub D, Female/Male

MECHANICAL

1. Size (maximum overall dimensions)
   - Height . . . . . (8.89 cm) 3.5"
   - Width . . . . . (48.3 cm) 19.0"
   - Depth . . . . . (30.5 cm) 12.0"
2. Weight. . . . . (4536 g) 10.0 lb

ENVIRONMENTAL

1. Operating Temperature Range . . . . . (32 °F - 122 °F) 0 °C - +50 °C
2. Storage Temperature Range . . . . . (–40 °F - 158 °F) –40 °C - +70 °C

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Figure 2 - 6416/6416S, front view