
MODELS 596ML/H

AUDIO MONITOR/TEST SWITCH MAINFRAMES

The Models 596ML/H Audio Monitor/Test Switch Mainframes are integral parts of the IED Monitor/Test System. They are specifically designed to perform audio switching functions for the purpose of either audible monitoring with a monitor speaker, or for testing with a test tone device.

MONITOR INPUT CONNECTIONS

All monitor input connections are made on the rear panel of the 596ML/H using compression-type screw terminals. There are 64 input circuits on each 596ML/H, arranged in four rows (A, B, C, D) of 16 circuits. Three types of input signals are accepted by the 596ML/H; balanced audio, unbalanced audio, and DC. See figure 1 for wiring information.

RS422 SERIAL CONNECTIONS

The RS422 serial communications connections are made through two 9 pin sub D connectors which are located on the mother board on the rear of the 596ML/H. The lower male sub D connector is the input, and the upper female sub D is the output connector. Two connections are provided in this way to allow 'looping through' to other devices on the same RS422 communications line. Flat ribbon cable can be used for this purpose for short runs (less than 100'). For cable runs of greater than 100', use cable composed of 4 twisted pairs with an overall shield. See figure 2 for connection details and information about suitable cables.

MONITOR OUTPUT/LOOP THROUGH INPUT

The monitor output and loop through input connections are located on the rear of the 596ML/H. The connectors used are compression-type screw terminals. For the monitor point signal to return to the main monitoring device (normally a 590A Monitor/Test Card), it must loop through all other 596ML/Hs in the system. The monitor output of each 596ML/H must be connected to the loop through input of the next 596ML/H. To complete the loop, the monitor output of the last 596ML/H connects to the monitor input of the 590A. See figure 3 for wiring information.

AC LINE INPUT

An IEC 250 AC 10 A line input connector is provided on the rear panel of the 596ML/H.

ADDRESSING

In order for the main RS422 card to be able to recognize and communicate with each 596ML/H card, on a single RS422 line, each must have a unique address. An 8 position DIP switch is provided on each 596ML/H card to set its address. The DIP switches work in binary format which results in 256 possible addresses (0 - 255). Each switch position represents a digital '0' when in the Off position, and a digital '1' when On. DIP switch position 1 is the least significant bit (LSB), and switch position 8 is the most significant bit (MSB). See figure 4 for DIP switch location.

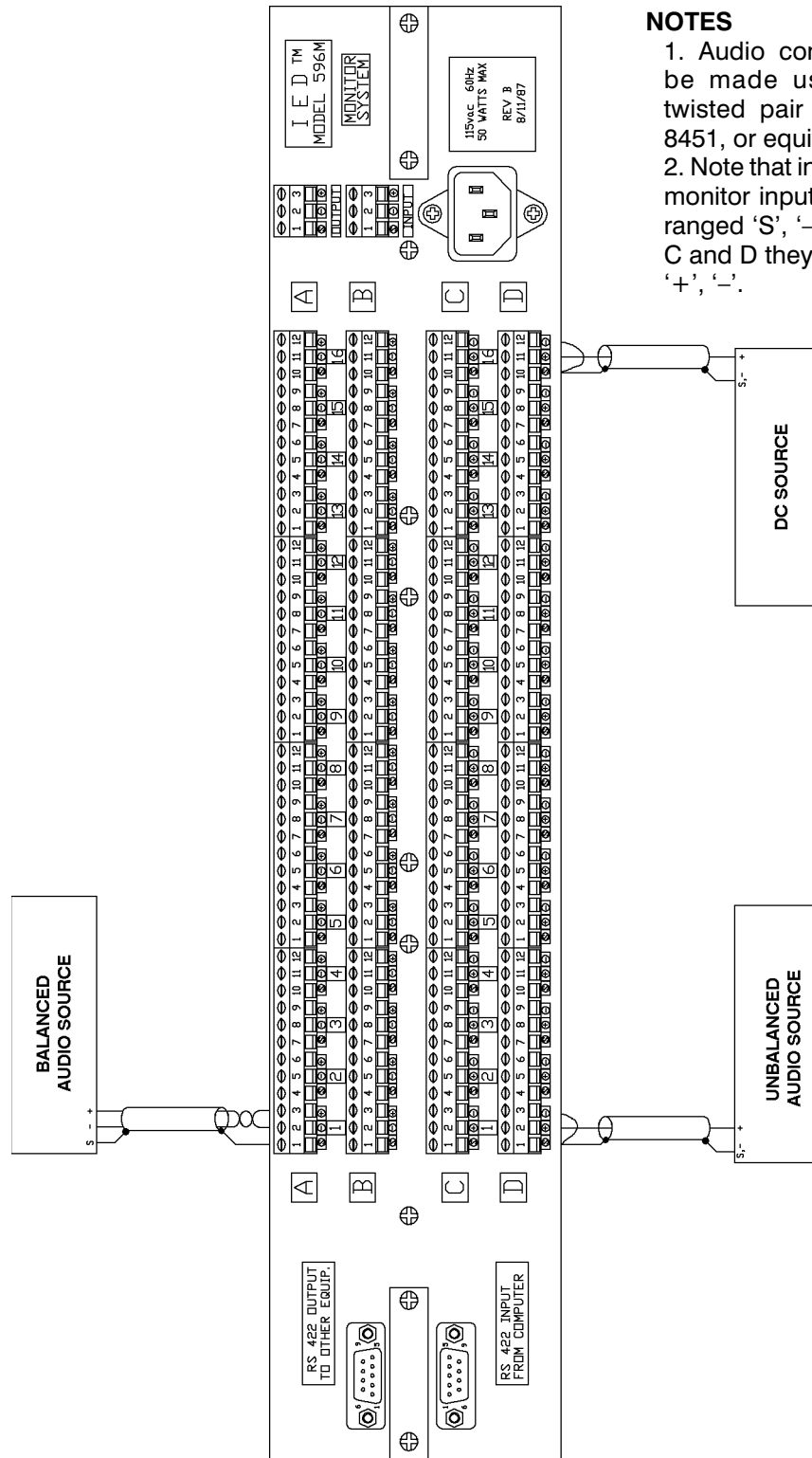


INPUT GAIN ADJUSTMENT

The input gain on the 596ML/H must be set to a value commensurate with the input level. This is accomplished by adjusting the gain SIPS which are a part of the differential input stage. The SIPS are socketed for easy replacement. The input stage can be set up to accept either 70 V, 8 , line level or lower level signals. See figure 4 for SIP location and value information. Consult the factory for other gain selections. The units are configured for line level inputs (unity gain) at the factory unless specified otherwise by the customer.

The gains of each row/channel can be set individually with 4-pin isolated SIPs, or with individual resistors "hair-pinned" in the board socket strips. **Note: if individual resistors are used, be careful to pair the proper values together.** Each channel requires two equal-valued resistors.

*Innovative Electronic Designs, Inc. • 9701 Taylorsville Road • Louisville, Kentucky 40299 • USA
Phone: (502) 267-7436 • Fax: (502) 267-9070 • Internet: <http://www.iedaudio.com>*

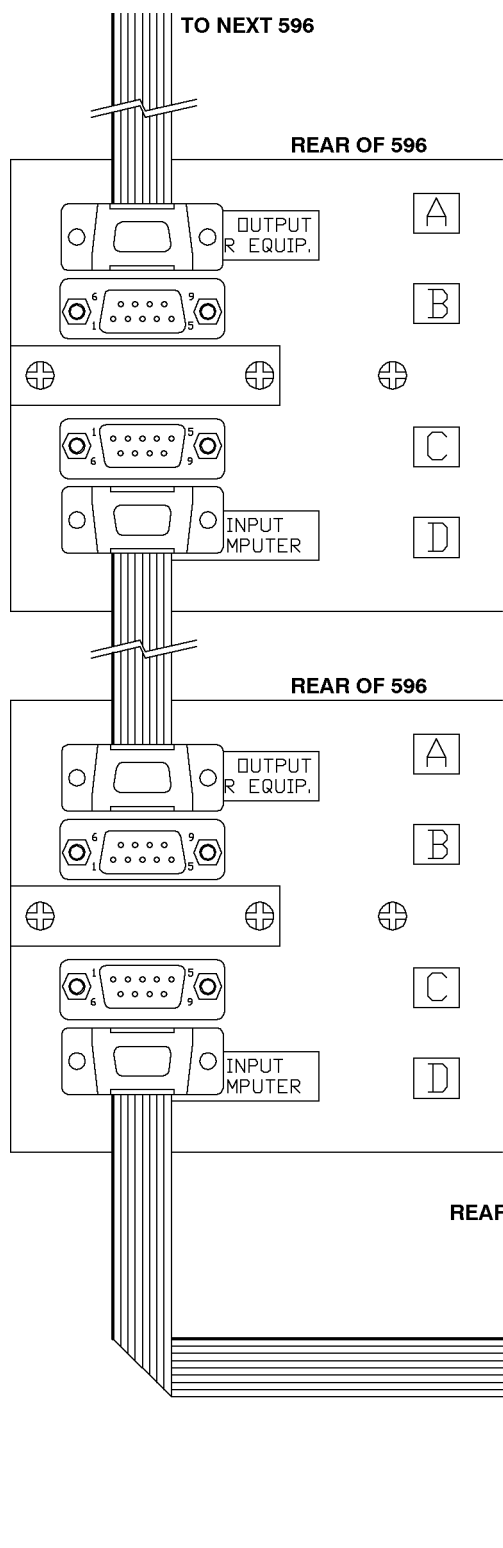


NOTES

1. Audio connections should be made using a shielded twisted pair such as Belden 8451, or equivalent.
2. Note that in rows A and B the monitor input terminals are arranged 'S', '-', '+', and in rows C and D they are arranged 'S', '+', '-'.

Figure 1 - 596 Monitor Input Connections





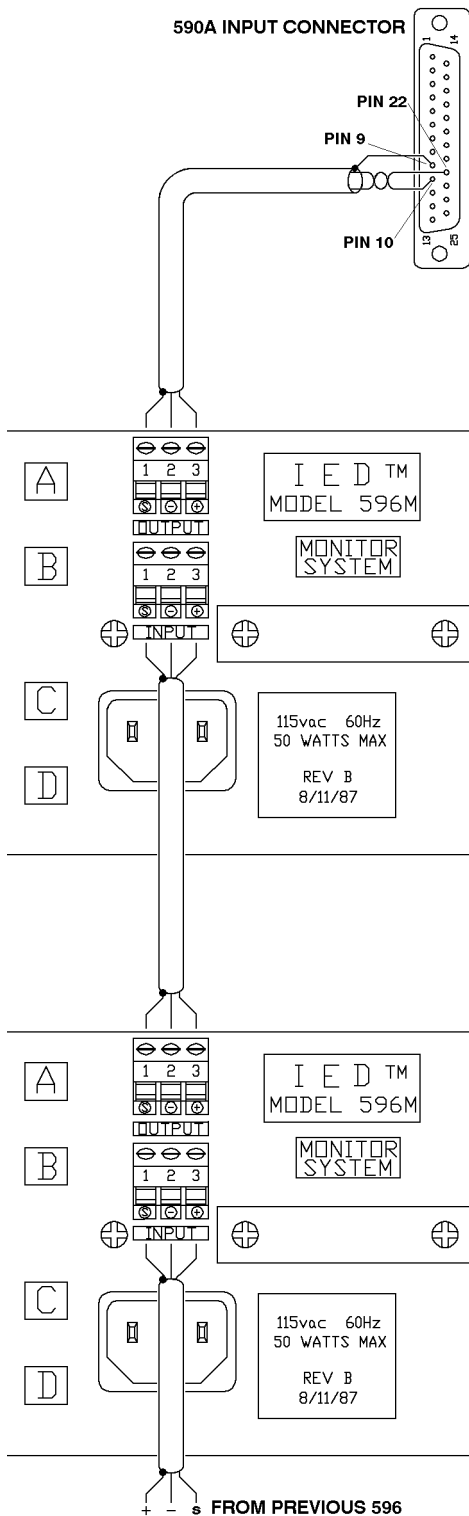
NOTES

- 1.Up to 256 596ML/Hs on a single RS422 line.
- 2.Up to 4000' of cable between devices.
- 3.For short runs (less than 100') use 10 conductor ribbon cable with 9 pin sub D connectors. For 100' to 1000' use Belden 9504 or 9681, or equivalent. For 1000' to 4000' use Belden 9681, or equivalent.

	Pin No.	Polarity	Function	Belden 9681 Color	Belden 9504 Color
Twisted pair	1	++	DSR	White body Blue stripe	Red
	2	-		Blue body White stripe	Black
	3		Shield	Shield	
Twisted pair	4	++	RxD	White body Orange stripe	White
	5	-		Orange body white stripe	Black
Twisted pair	6	++	DTR	White body Green stripe	Green
	7	-		Green body White stripe	Black
Twisted pair	8	++	TxD	White body Brown stripe	Blue
	9	-		Brown body White stripe	Black

Figure 2 - 596 RS422 Connections

*Innovative Electronic Designs, Inc. • 9701 Taylorsville Road • Louisville, Kentucky 40299 • USA
 Phone: (502) 267-7436 • Fax: (502) 267-9070 • Internet: <http://www.iedaudio.com>*



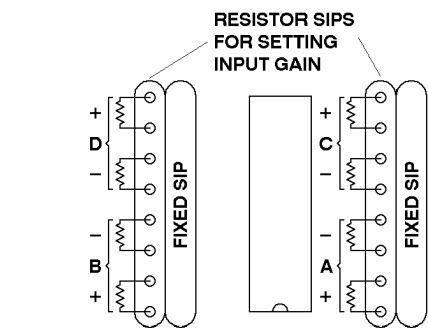
NOTES

1. For audio signals use shielded twisted pair such as Belden 8451, or equivalent.
2. For complete 590A wiring information, see Section 3, Group 54 Sub B of the IED Data Manual.

Figure 3 - 596 Monitor Output/Loop Through Input



GAIN ADJUST SIPS vs. INPUTS	
INPUTS	SIPS
A 1 - D 1	RS51, RS67
A 2 - D 2	RS50, RS66
A 3 - D 3	RS49, RS65
A 4 - D 4	RS48, RS64
A 5 - D 5	RS47, RS63
A 6 - D 6	RS46, RS62
A 7 - D 7	RS45, RS61
A 8 - D 8	RS44, RS60
A 9 - D 9	RS43, RS59
A10 - D10	RS42, RS58
A11 - D11	RS41, RS57
A12 - D12	RS40, RS56
A13 - D13	RS39, RS55
A14 - D14	RS38, RS54
A15 - D15	RS37, RS53
A16 - D16	RS36, RS52



INPUT	GAIN	SIP VALUE
100 V	-17 dB	330 k
70 V	-14 dB	220 k
8	-10 dB	150 k
Line Level	0 dB	47 k
Min.	6 dB	22 k

To calculate gain:

$$\text{Gain} = 20 \log \frac{47 \text{ k}}{\text{SIP Value}}$$

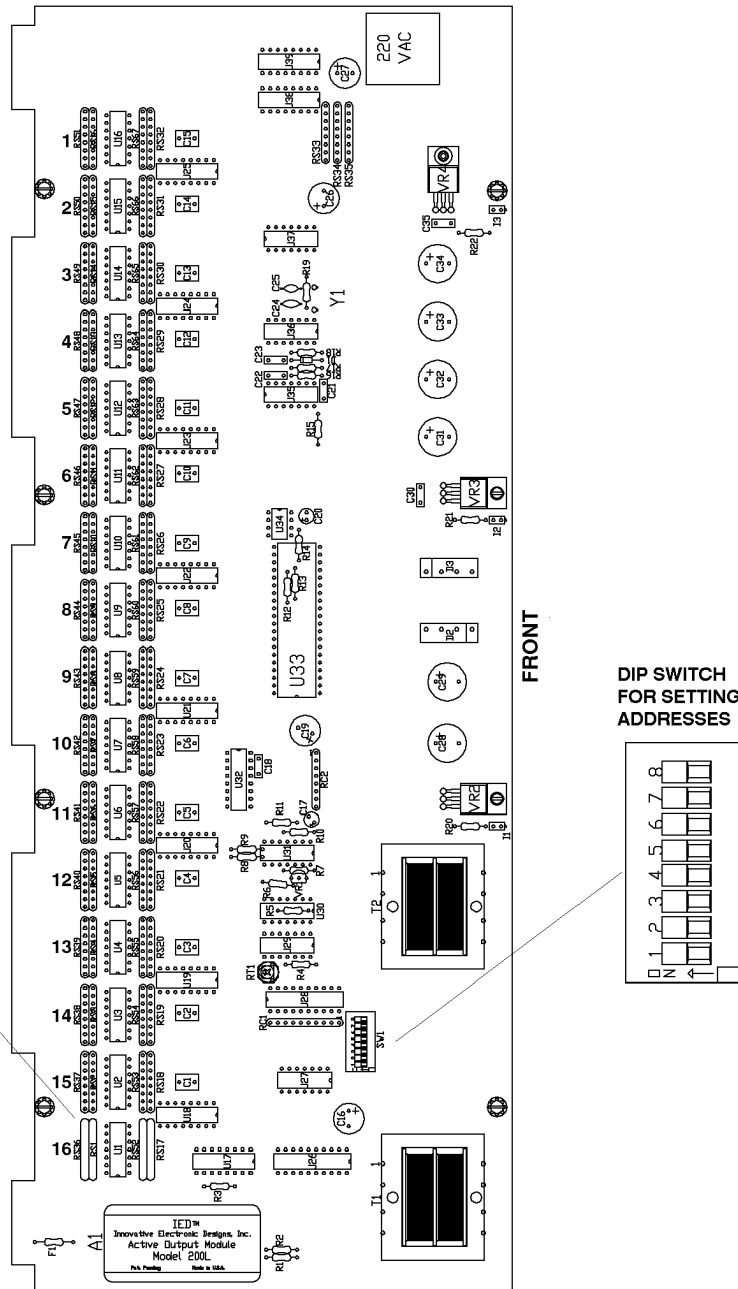


Figure 4 - 596 Parts Locator Diagram
Showing Location of Input Level SIPs and DIP Switch

*Innovative Electronic Designs, Inc. • 9701 Taylorsville Road • Louisville, Kentucky 40299 • USA
Phone: (502) 267-7436 • Fax: (502) 267-9070 • Internet: <http://www.iedaudio.com>*