



BTR INSTRUMENTS
TECHNICAL INSTRUMENTS
MODULES
EMCO
A

**077 DIGITAL SWITCHBOARD
RANGING & SCALING INSTRUCTIONS
TRANSDUCE/ER INDICATORS MODELS**

077-CDU3-FA12-AN 077-CDU3-HG12-AN 077-CDU3-HH12-AN

All ranging and scaling can be done with the Switchboard mounted in a panel or on a bench.

1. Disconnect all power to the meter and inputs.
2. Remove the (4) screws holding the bezel/lens to the meter. Carefully place bezel/lens, gaskets, and escutcheon plate where they will not be scratched or damaged.
3. RANGING: (Refer to Range Selection Tables). Verify range switch positions.
4. SCALING: (Refer to Scaling Selection Tables).

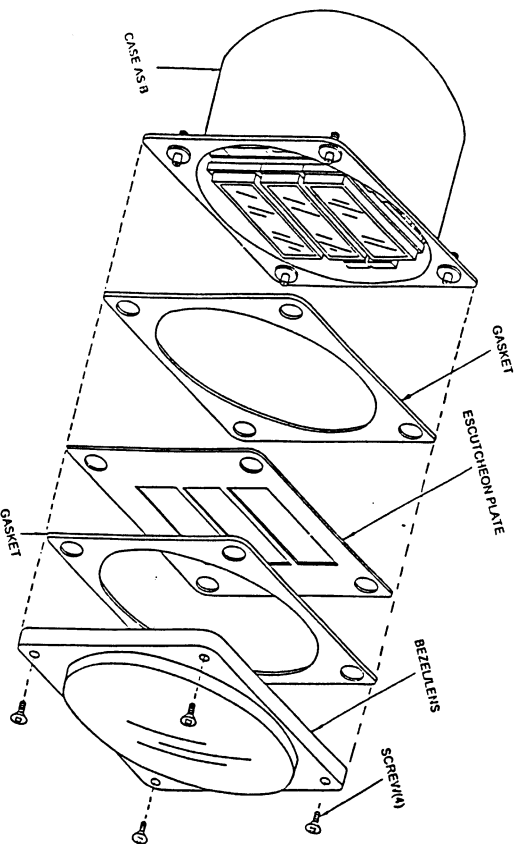
WARNING: Hazardous voltages may be present during the following calibration procedure. Only qualified technical personnel should perform calibration. Damage may occur if *Inputs* are connected to the wrong terminals.

5. Select the desired readout by changing the appropriate scaling switch positions so the desired full scale reading is within the display range. Full scale voltage and current inputs can be scaled to display any reading from 100 to 1999 counts.
6. Connect a calibrator to the input and apply auxiliary power to meter.
7. For Model FA12: Apply a zero (0) current input and set the zero adjustment for a display reading of 000.

For Model HG12: Apply a four milliampere (4 mA) current input and set the zero adjustment for a display reading of 000

For Model HH12: Apply a twelve milliampere (12 mA) current input and set the zero adjustment for a display reading of 000.

8. Apply an input current close to the desired full scale and set the span adjustment for the desired display.
9. Repeat steps 7 and 8 until the correct readings are achieved. Disconnect all power and inputs after calibration.
10. DECIMAL POINTS: (Refer to Decimal Point Selection Tables)
Set the decimal point location by changing the appropriate switch position.
11. Replace the bezel/lens, gaskets, and escutcheon plate. Ensure all gaskets and parts are properly placed and aligned. Fasten with four (4) fixing screws.



CROMPTON INSTRUMENTS

1640 Airport Road, Suite 109, Kennesaw GA 30144
Telephone: 770-425-8903 Fax: 770-423-7194

Made in U.S.A.
00-970200-001

PAT. No. 4,728,946

Copyright 1993
8-96

DIGITAL SWITCHBOARD

CONNECTION DIAGRAMS

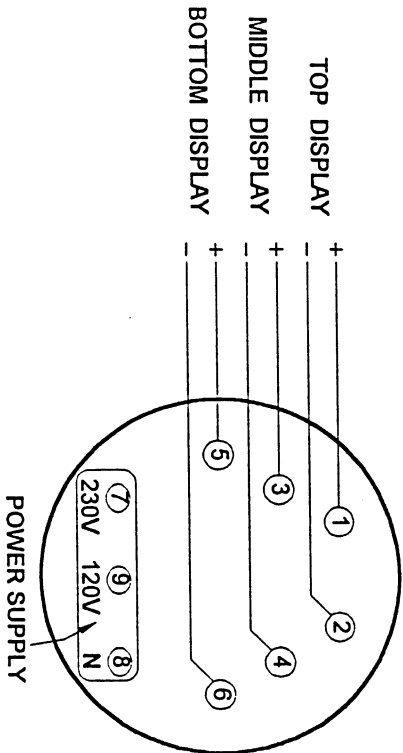
TERMINAL CONNECTIONS:

NOTE: Pins 2, 4, and 6 are connected internally. Use *floating* INPUTS.

DISPLAY TERMINAL
+ INPUT - INPUT

TOP	1	2
MIDDLE	3	4
BOTTOM	5	6

TRANSDUCER INDICATOR



SWITCH SELECTION TABLES

CAUTION: Reverse *input* connections and switch settings before applying *inputs* or *auxiliary* power as damage to the meter may occur.

NOTES: 1 = ON = Switch Closed ; 0 = OFF = Switch Open

UPPER DISPLAY:

Input	S1	S2
Range	1 2 3 4	1 2 3 4
0-1mA	1 1 0 0 0 0	0 0 0 0 0 0
4-20 mA	1 1 0 0 0 0	0 0 0 0 0 0
4-12-20 mA	1 1 0 0 0 0	0 0 0 0 0 0

P1 = Zero Adjust

Scaling	S1	S2
F.S. Display	5 6 7 8	1 2 3 4
1125-1999	0 0 0 0	0 0 0 0
475-1125	0 1 0 1	1 1 1 1
100-475	1 1 1 1	1 1 1 1

P2 = Span Adjust

Dec Point	S1
Selection	1 2 3
XXXX X	0 0 1
XX XX	0 1 0
X XXX	1 0 0
XXXX	0 0 0

MIDDLE DISPLAY:

Input	S30
Range	1 2 3 4 5 6
0-1mA	1 1 0 0 0 0
4-20 mA	1 1 0 0 0 0
4-12-20 mA	1 1 0 0 0 0

P31 = Zero Adjust

Scaling	S31	S61
F.S. Display	7 8 1 2	3 4 5 6
1125-1999	0 0 0 0	0 0 0 0
475-1125	0 1 0 1	1 1 0 1
100-475	1 1 1 1	1 1 1 1

P32 = Span Adjust

Dec Point	S31
Selection	4 5 6
XXXX X	0 0 1
XX XX	0 1 0
X XXX	1 0 0
XXXX	0 0 0

LOWER DISPLAY:

Input	S30	S60	S61
Range	7 8 1 2 3 4 5 7 8	1 2 3 4 5 7 8	1 2 3 4 5 7 8
0-1mA	1 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0
4-20 mA	1 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0
4-12-20 mA	1 1 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0

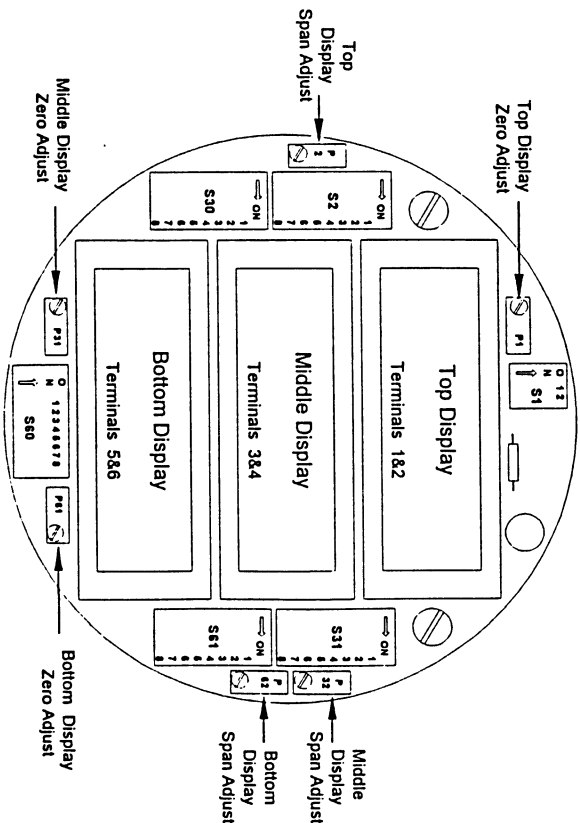
P61 = Zero Adjust

Scaling	S61
F.S. Display	3 4 5 6
1125-1999	0 0 0 0
475-1125	0 1 0 1
100-475	1 1 1 1

P62 = Span adjust

Dec Point	S60
Selection	6 7 8
XXXX X	0 0 1
XX XX	0 1 0
X XXX	1 0 0
XXXX	0 0 0

FRONT VIEW : LENS & TRIM PLATE REMOVED



CAUTION: DAMAGE TO THE METER MAY OCCUR IF INPUTS ARE CONNECTED TO THE WRONG TERMINALS!

JTES: 1 = ON = Switch Closed
0 = OFF = Switch Open

PER DISPLAY

INPUT	S1		S2			
RANGE	1	2	1	2	3	4
5A AC	1	1	1	0	0	0

SCALING	S2			
F.S. DISPLAY	5	6	7	8
1125-1999	0	0	0	0
475-1125	0	1	0	1
100-475	1	1	1	1

P1 = ZERO ADJ.

DEC. POINT	S31		
SELECTION	1	2	3
XXX	0	0	1
XX.XX	0	1	0
X.XXX	1	0	0

P2 = SPAN ADJ.

MIDDLE DISPLAY

INPUT	S30					
RANGE	1	2	3	4	5	6
600VAC	0	0	0	0	0	1

SCALING	S31		S61	
F.S. DISPLAY	7	8	1	2
1125-1999	0	0	0	0
475-1125	0	1	0	1
100-475	1	1	1	1

P31 = ZERO ADJ.

DEC. POINT	S31		
SELECTION	4	5	6
XXX	0	0	1
XX.XX	0	1	0
X.XXX	1	0	0

P32 = SPAN ADJ.

LOWER DISPLAY

INPUT	S30		S60				S61		
RANGE	7	8	1	2	3	4	5	7	8
FREQ.	0	0	0	0	0	0	0	1	0

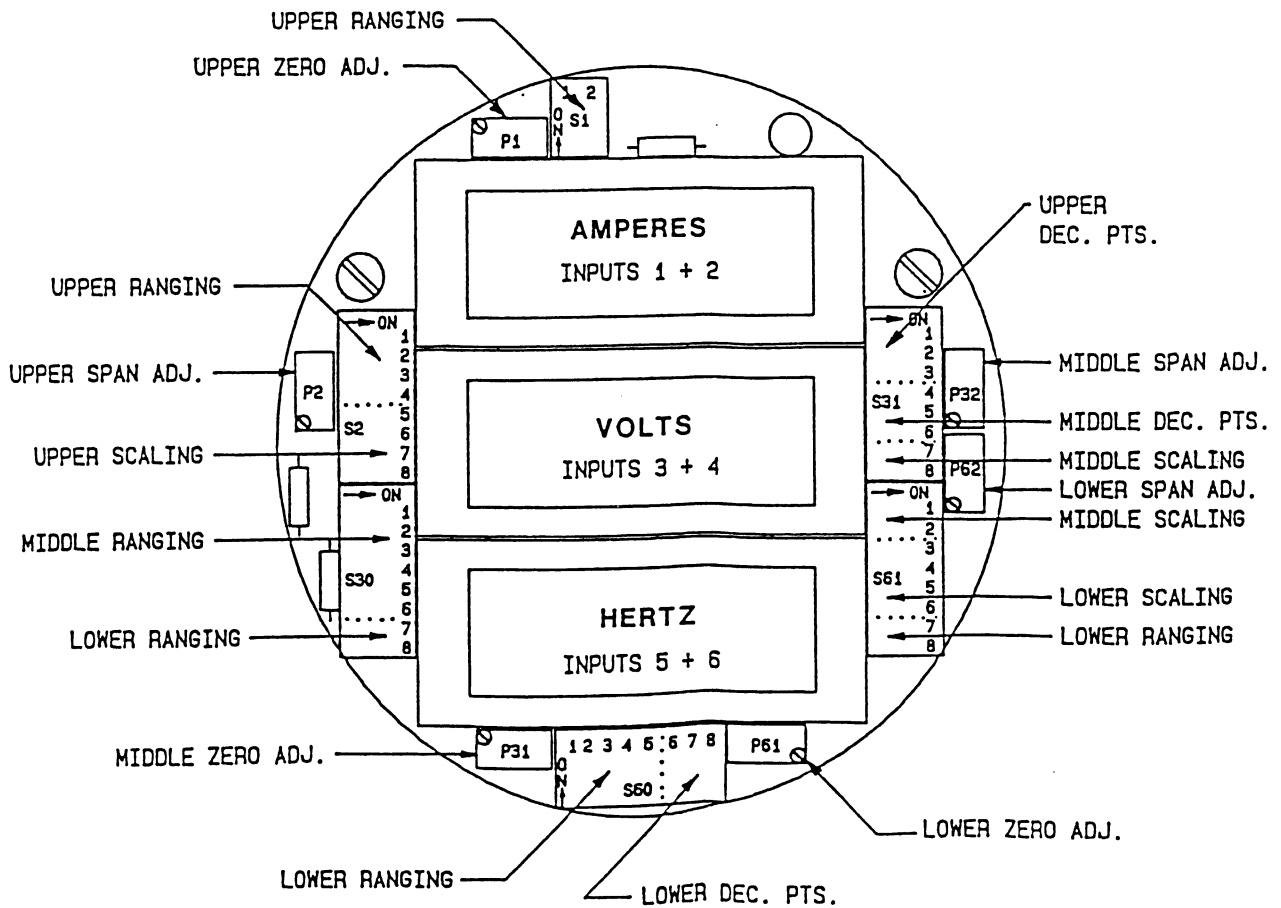
SCALING	S61			
F.S. DISPLAY	3	4	5	6
FREQ.	0	0	0	0

P61 = ZERO ADJ.

DEC. POINT	S60		
SELECTION	6	7	8
FREQ.	0	0	1

P62 = SPAN ADJ.

FRONT VIEW
LENS + TRIM PLATE REMOVED

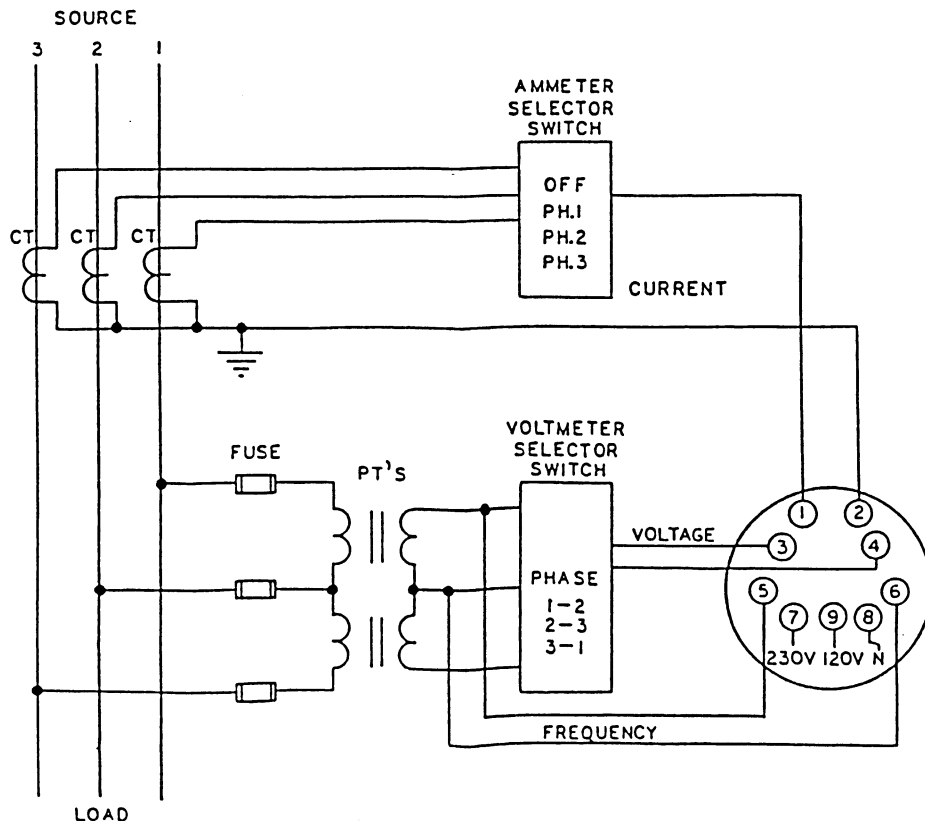
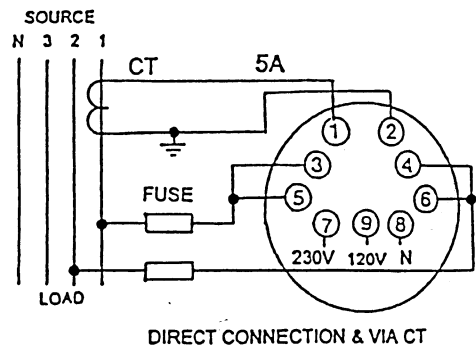
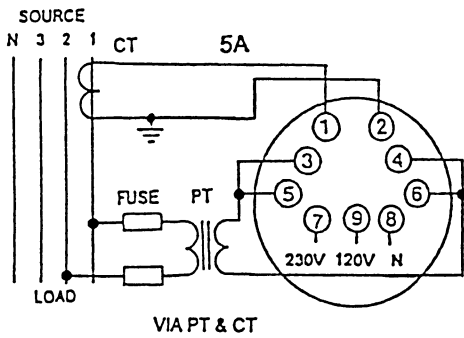


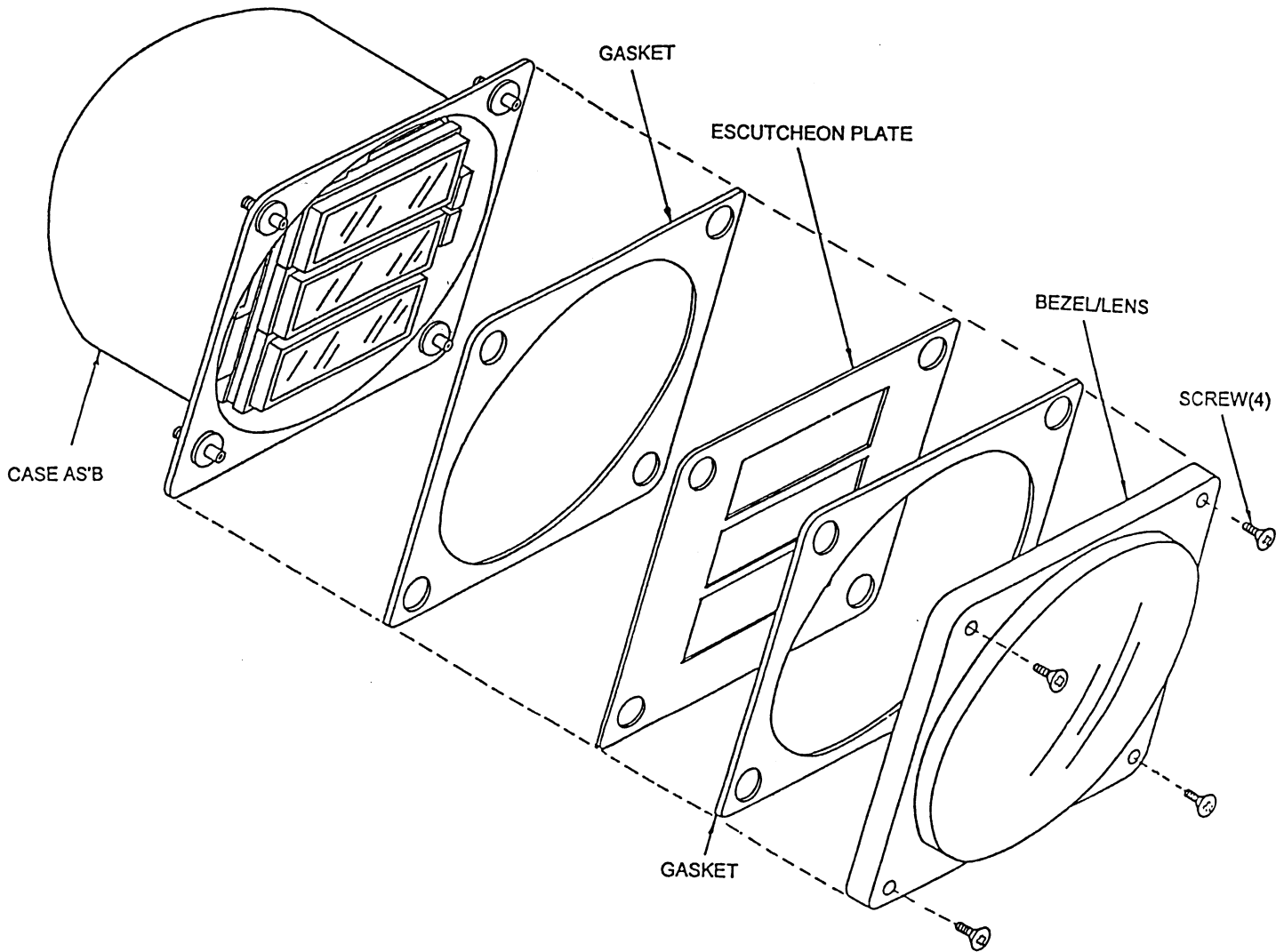
DIGITAL SWITCHBOARD CONNECTION DIAGRAMS

CAUTION: Damage to the meter may occur if inputs are applied to the wrong terminals.

TERMINAL CONNECTIONS:

<u>TERMINALS</u>	<u>INPUT</u>	<u>DISPLAY</u>
1 & 2	Current (0 to 5 amperes)	Amperes
3 & 4	Voltage (0 to 600 volts)	Volts
5 & 6	Voltage (60 to 600 volts)	Hertz





Crompton Instruments

1640 Airport Road, Suite 109, Kennesaw, GA 30144

Telephone: 404-425-8903 Fax: 404-423-7194

MADE IN U.S.A
00-970196-001A

Copyright 1993
1-94

PAT. No 4,728,946

DIGITAL SWITCHBOARD
RANGING & SCALING INSTRUCTIONS
MODEL 077-CDU3-TB03-AN

All ranging and scaling can be done with the Switchboard mounted in a panel or on a bench.

1. Disconnect all power to the meter and inputs.
2. Remove the four (4) screws holding the bezel/lens to the meter. Carefully place bezel/lens, gaskets, and escutcheon plate where they will not be scratched or damaged.
3. RANGING: (Refer to Range Selection Tables)

Verify range switch positions.

4. SCALING: (Refer to Scaling Selection Tables)

WARNING: Hazardous voltages may be present during the following calibration procedure. Only qualified technical personnel should perform calibration. Damage may occur if Inputs are connected to the wrong terminals.

The 5AAC range can be used with any external 5A secondary current transformer. The display can be scaled to read the current transformer primary current.

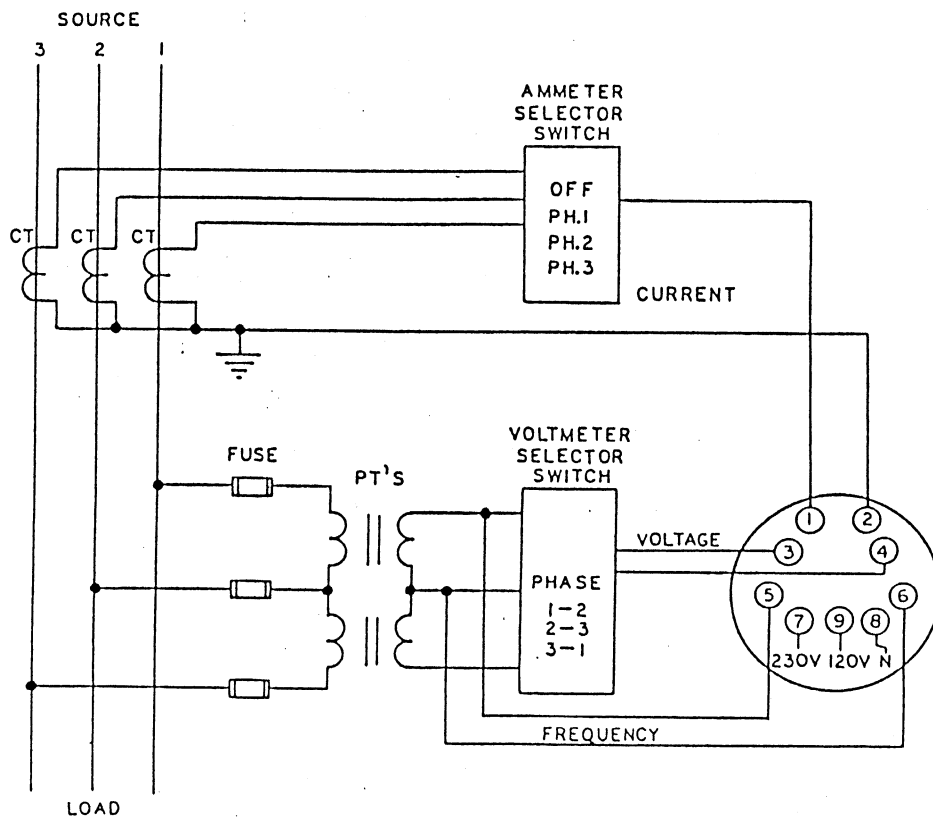
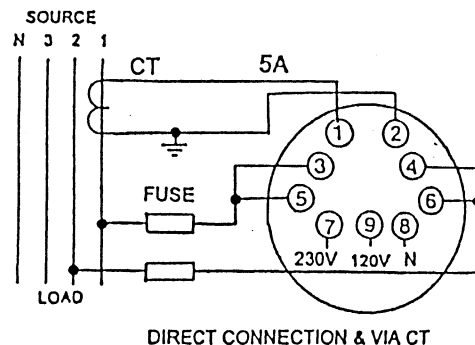
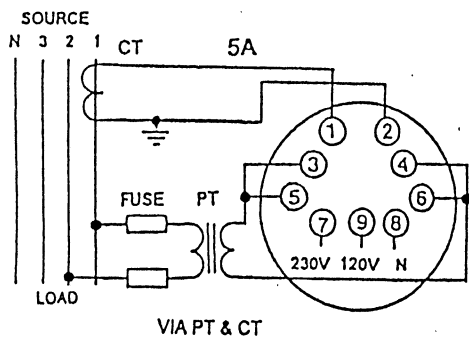
5. Select the desired readout by changing the appropriate scaling switch positions so the desired full scale reading is within the display range. Full scale voltage and current inputs can be scaled to display any reading from 100 to 1999 counts.
6. Connect a calibrator to the input and apply power to meter.
7. Apply an input signal close to the desired full scale and set the span adjustment for the desired display.
8. Input a signal 10% of the desired full scale and set the zero adjustment for 10% of full scale display reading.
9. Repeat steps 6 and 7 until the correct readings are achieved. Disconnect all power and inputs after recalibration.
10. DECIMAL POINTS: (Refer to Decimal Point Selection Tables)
Set the decimal point location by changing the appropriate switch position.
11. Replace the bezel/lens, gaskets, and escutcheon plate. Ensure all gaskets and parts are properly placed and aligned. Fasten with four (4) fixing screws.

DIGITAL SWITCHBOARD CONNECTION DIAGRAMS

CAUTION: Damage to the meter may occur if inputs are applied to the wrong terminals.

TERMINAL CONNECTIONS:

<u>TERMINALS</u>	<u>INPUT</u>	<u>DISPLAY</u>
1 & 2	Current (0 to 5 amperes)	Amperes
3 & 4	Voltage (0 to 600 volts)	Volts
5 & 6	Voltage (60 to 600 volts)	Hertz



CAUTION: DAMAGE TO THE METER MAY OCCUR IF INPUTS ARE CONNECTED TO THE WRONG TERMINALS!

NOTES: 1 = ON = Switch Closed
0 = OFF = Switch Open

UPPER DISPLAY

INPUT	S1		S2			
RANGE	1	2	1	2	3	4
5A AC	1	1	1	0	0	0

SCALING	S2			
F.S. DISPLAY	5	6	7	8
1125-1999	0	0	0	0
475-1125	0	1	0	1
100-475	1	1	1	1

P1 = ZERO ADJ.

DEC. POINT SELECTION	S31		
XXX.X	1	2	3
XX.XX	0	1	0
X.XXX	1	0	0

P2 = SPAN ADJ.

MIDDLE DISPLAY

INPUT	S30					
RANGE	1	2	3	4	5	6
600VAC	0	0	0	0	0	1

SCALING	S31		S61	
F.S. DISPLAY	7	8	1	2
1125-1999	0	0	0	0
475-1125	0	1	0	1
100-475	1	1	1	1

P31 = ZERO ADJ.

DEC. POINT SELECTION	S31		
XXX.X	4	5	6
XX.XX	0	1	0
X.XXX	1	0	0

P32 = SPAN ADJ.

LOWER DISPLAY

INPUT	S30		S60				S61		
RANGE	7	8	1	2	3	4	5	7	8
FREQ.	0	0	0	0	0	0	0	1	0

SCALING	S61			
F.S. DISPLAY	3	4	5	6
FREQ.	0	0	0	0

P61 = ZERO ADJ.

DEC. POINT SELECTION	S60		
FREQ.	6	7	8
	0	0	1

P62 = SPAN ADJ.

FRONT VIEW
LENS + TRIM PLATE REMOVED

