INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

SWITCHBOARD WATTHOUR METERS TYPES D2B-2F; D2B-7F AND D2B-8F IN FT-21 FLEXITEST CASE

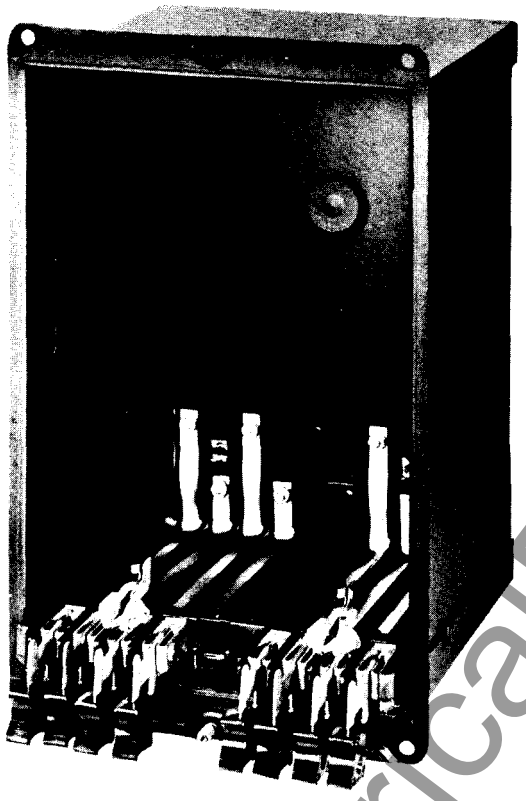

Fig. 1. FT-21 Case.

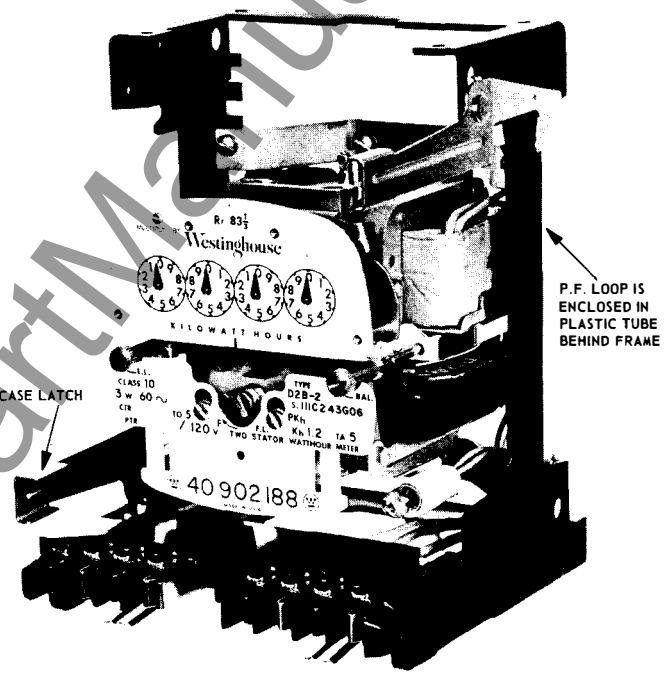

Fig. 2. D2B Chassis.

APPLICATION CHART

METER TYPE	NUMBER OF STATORS	CIRCUIT APPLICATION
D2B-2F	2	2- or 3-Phase, 3-Wire 3-Phase, 4-Wire Delta 3-Phase, 4-Wire Wye
D2B-7F	2	3-Phase, 4-Wire Delta
D2B-8F	2	3-Phase, 4-Wire Wye

SUPERSEDES I.L. 42-201.3B

EFFECTIVE JULY 1967

GENERAL

The meter elements are mounted on a removable chassis, which is held in the case by two latches. All connections between the case and the chassis are made through the test switches. Automatic shorting switches are provided on all current circuits to prevent opening current transformers when testing or removing the chassis. For testing, leads can be clipped to the test lugs above the chassis jaws and on the switch blades.

Two test plugs are available to facilitate calibration of these meters. A 10-circuit plug is inserted into the chassis jaws and is provided with binding post terminals for connections to the test circuit. Current measurements are made by connecting ammeters to a current circuit test plug, which is then inserted into the current switch assembly, between the chassis and the case.

The hardware supplied with the meter permits semi-flush mounting on panels up to 3/16 inch thick. For projection mounting on panels thicker than 3/16 inch, special hardware is furnished upon request (specify panel thickness).

Provisions have been made on all FT-21 cases for convenient field installation of either 2- or 3-wire pulse initiators. Removal of three knockouts (located in the back of the case, near the top) will permit installation of an output terminal-block and pin assembly. A mating bracket and socket assembly is then attached to the meter frame and latch assembly. The output circuits will be closed by inserting the meter frame and latch assembly into the case. All necessary parts are available in kit form for each type of pulse initiator. It is not practical to make a field installation of type CD-21 because a special disk is required.

CALIBRATION

All meters are calibrated on single phase. The basic watthour constant (K_h) for these meters is .6 per nominal 600 watt rating. The single-phase test speed is 16 2/3 rpm except for the D2B-8, which is 22 2/9 rpm. Both of these are given on a 120-volt basis.

The following is a guide to watthour stator calibration. Detailed calibration procedure is available in IL-42-101.3.

ADJUSTMENTS

Full Load, Light Load and Balance

All of these adjustments are made at the front of the meter. The full load adjuster knob is in the center; the light load knob at the left; and the balance knob at the right. Direction of adjustment is indicated by the arrow on the nameplate ("F" indicates fast).

Power Factor

Power factor adjustment is made by changing the resistance of the soldered loop located at the back of each electromagnet. Increasing the resistance (lengthening the loop) increases the speed on lagging power factors.

REPLACEMENT PARTS AND REPAIRS

Where facilities are limited or where only a small number of meters are used, it is recommended that the meters be returned to the factory for repairs. When returning a meter for repairs, obtain a Returned Material Tag for the District Office so as to avoid delay in identifying the shipment.

GENERAL DATA

COMBINED STATORS OF 5. AMP. – 120. VOLT – 60 CYCLE METERS		
TYPE	D2B-2F	D2B-8F
STARTING WATTS	6.	6.
WATTHOUR CONSTANT (K_h)	1.2	1.8
FULL LOAD R.P.M. ON SINGLE PHASE TEST	16-2/3	22-2/9
FOR TRANSFORMER BURDENS SEE THE TABLE ON PAGE 3.		

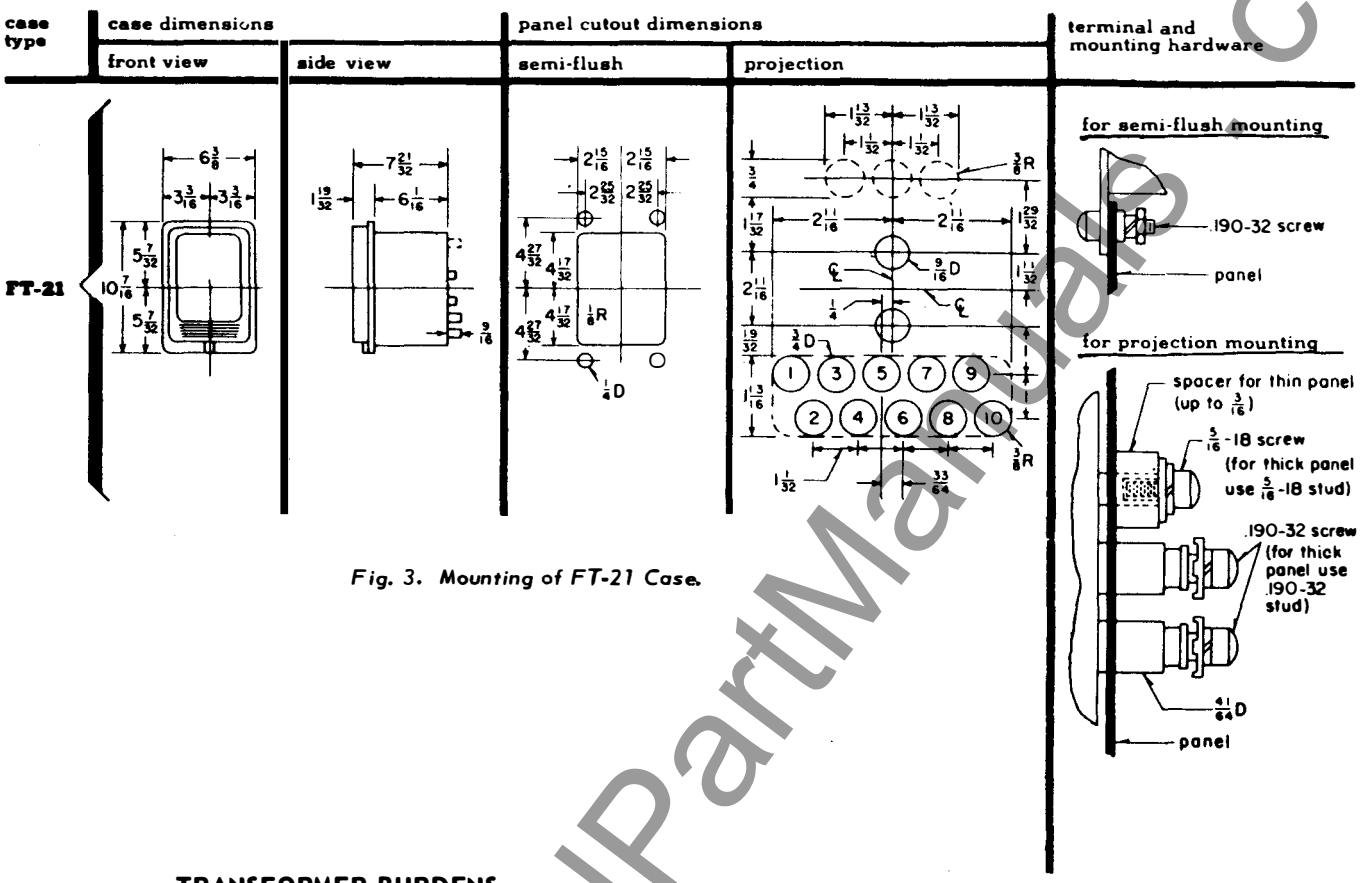

Fig. 3. Mounting of FT-21 Case.

TRANSFORMER BURDENS FOR 60-CYCLE METERS

VOLTAGE COIL CIRCUITS, INCLUDING P.I. LAMP.				EACH STATOR
FOR RATED MULTIPLES OF 120. V.	VOLT-AMPS.			8.65
	WATTS			1.35
	POWER FACTOR			.156
CURRENT COIL CIRCUITS				
EACH STATOR	FULL COIL	HALF COIL	Z CIRC.	
5. AMPS. ON 5. AMP. COIL.				
VOLT-AMPS.	.39	.25	.39	
WATTS	.29	.21	.29	
POWER FACTOR	.75	.84	.75	
5. AMPS. ON 2.5 AMP. COIL.				
VOLT-AMPS.	1.2	.65	1.2	
WATTS	.64	.39	.64	
POWER FACTOR	.533	.600	.533	

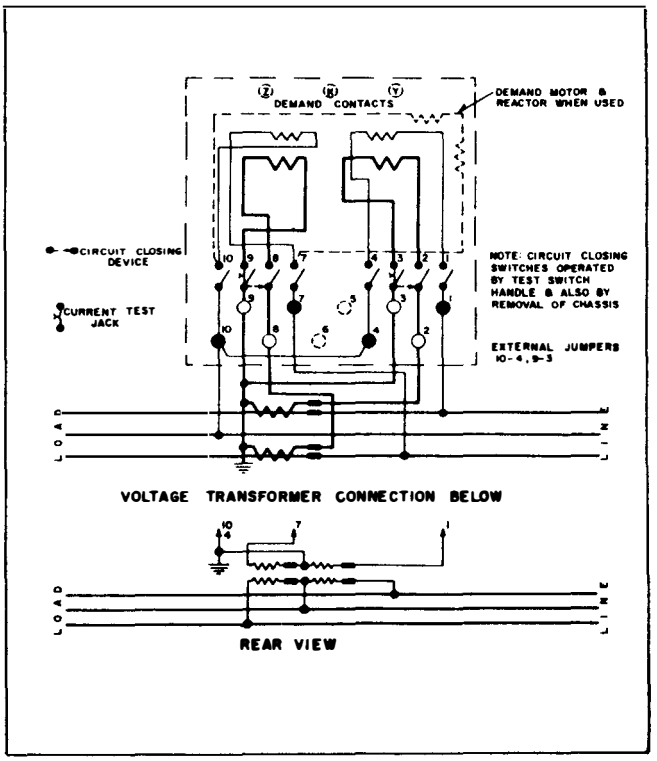

Fig. 4. Type D2B-2F, 3-Phase, 3-Wire

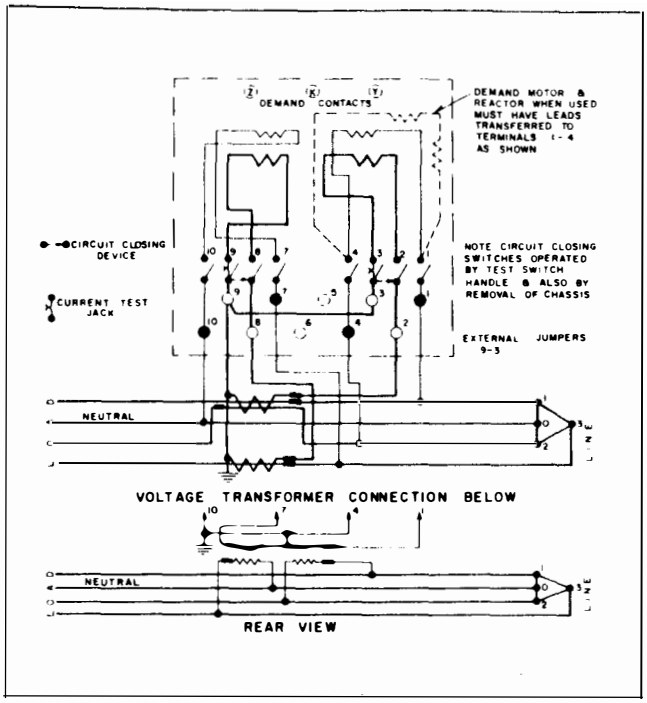

Fig. 5. Type D2B-2F, 3-Phase, 4-Wire, Delta

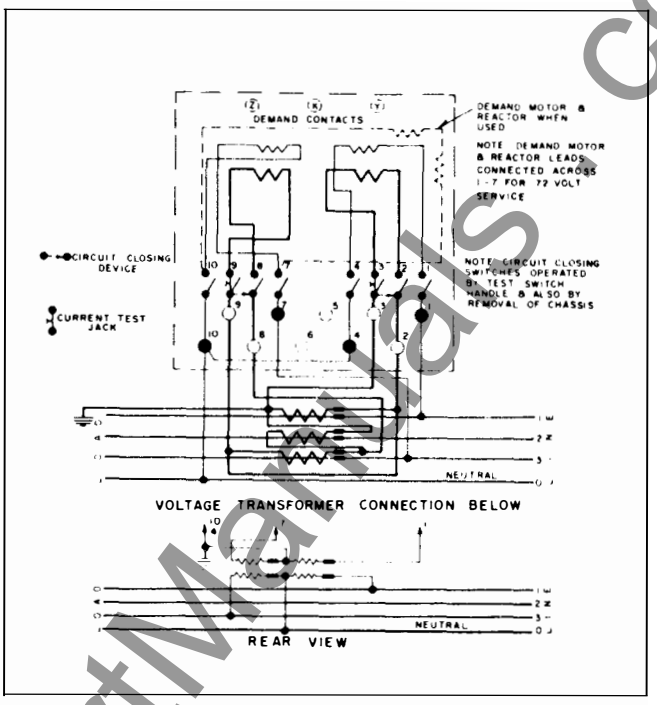

Fig. 6. Type D2B-2F, 3-Phase, 4- Wire, Wye.

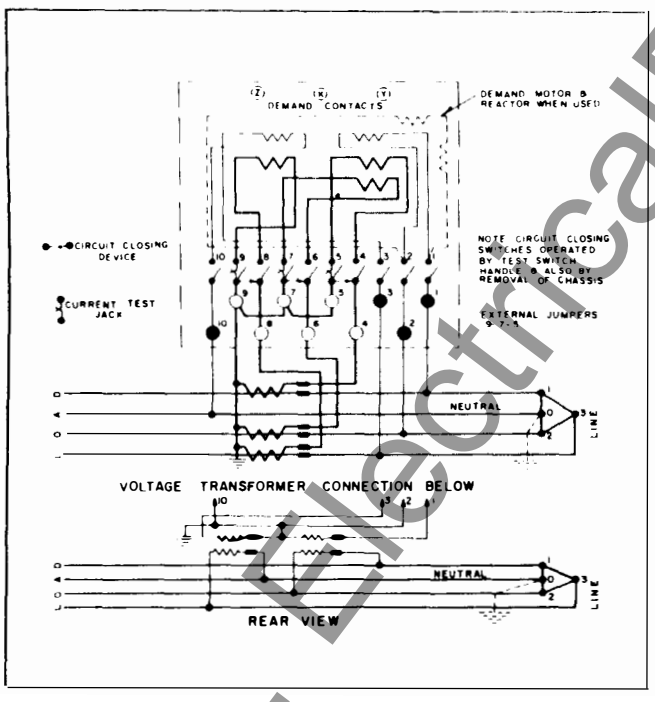

Fig. 7. Type D2B-7F, 3-Phase, 4-Wire, Delta

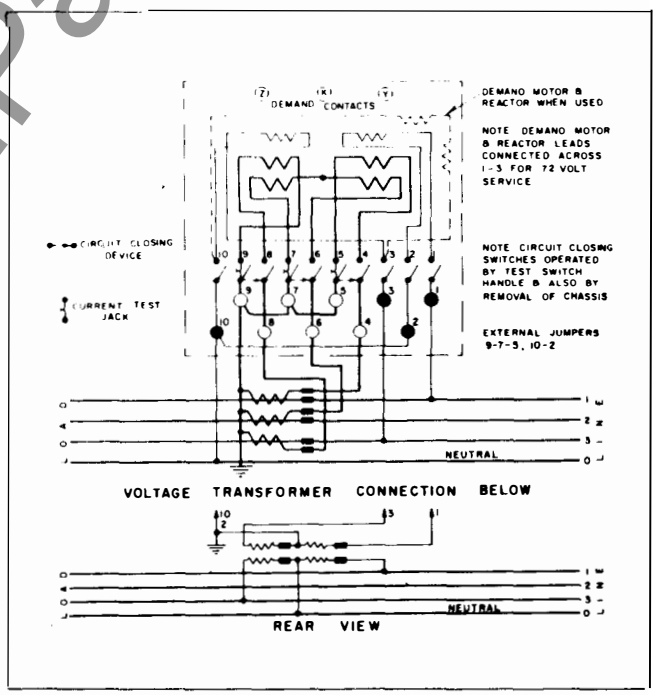

Fig. 8. Type D2B-8F, 3-Phase, 4-Wire, Wye

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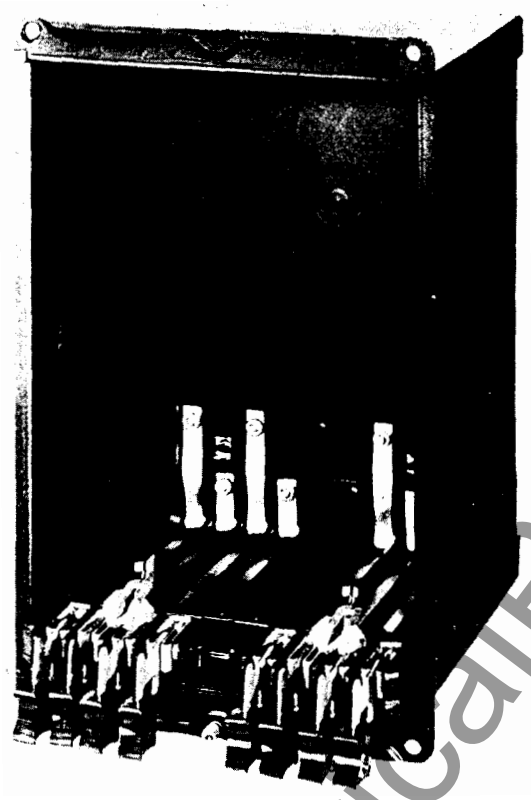
IN FT-21 FLEXITEST CASE



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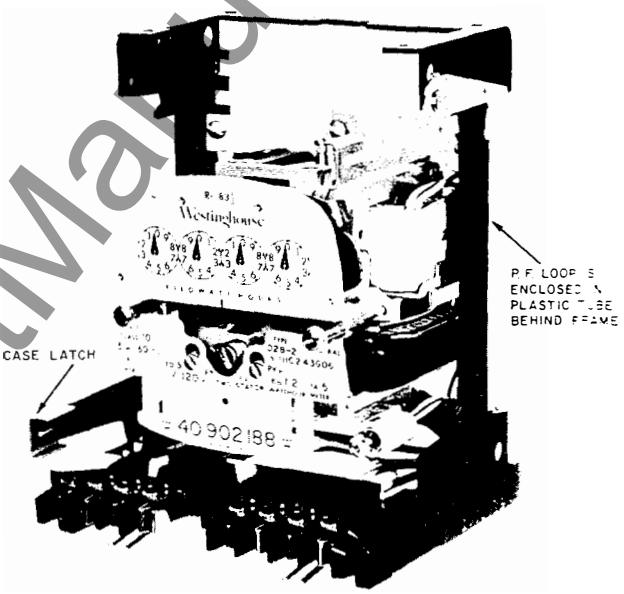

Fig. 2. D2B Chassis.

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SUPERSEDES I.L. 42-201.3

EFFECTIVE JULY 1963

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The hardware supplied with the meter permits mounting either projection or semi-flush on panels up to 3/16" thick. For projection mounting on panels thicker than 3/16" special hardware is furnished on request.

Provisions have been made on all FT-21 cases for convenient field installation of either 2 or 3 wire contact devices. Three knockouts located on the back of the case (close to the top) when removed, allow a molded insulation block, with two or three terminals and male plugs, to be fastened to the case. A bracket, with the proper number of female sockets, can be attached to the rear of the meter-frame & latch assembly in the proper position to allow the male and female parts to mate when the meter is inserted in the case. The parts are available in kit form for this application.

CALIBRATION

All meters are calibrated on single phase. The basic watthour constant (K_h) for these meters is .6 per nominal 600 watt rating. The single-phase test speed 16-2/3 rpm except for the D2B-8 for which it is 22-2/9 rpm. Both of these are given on a 120 volt basis.

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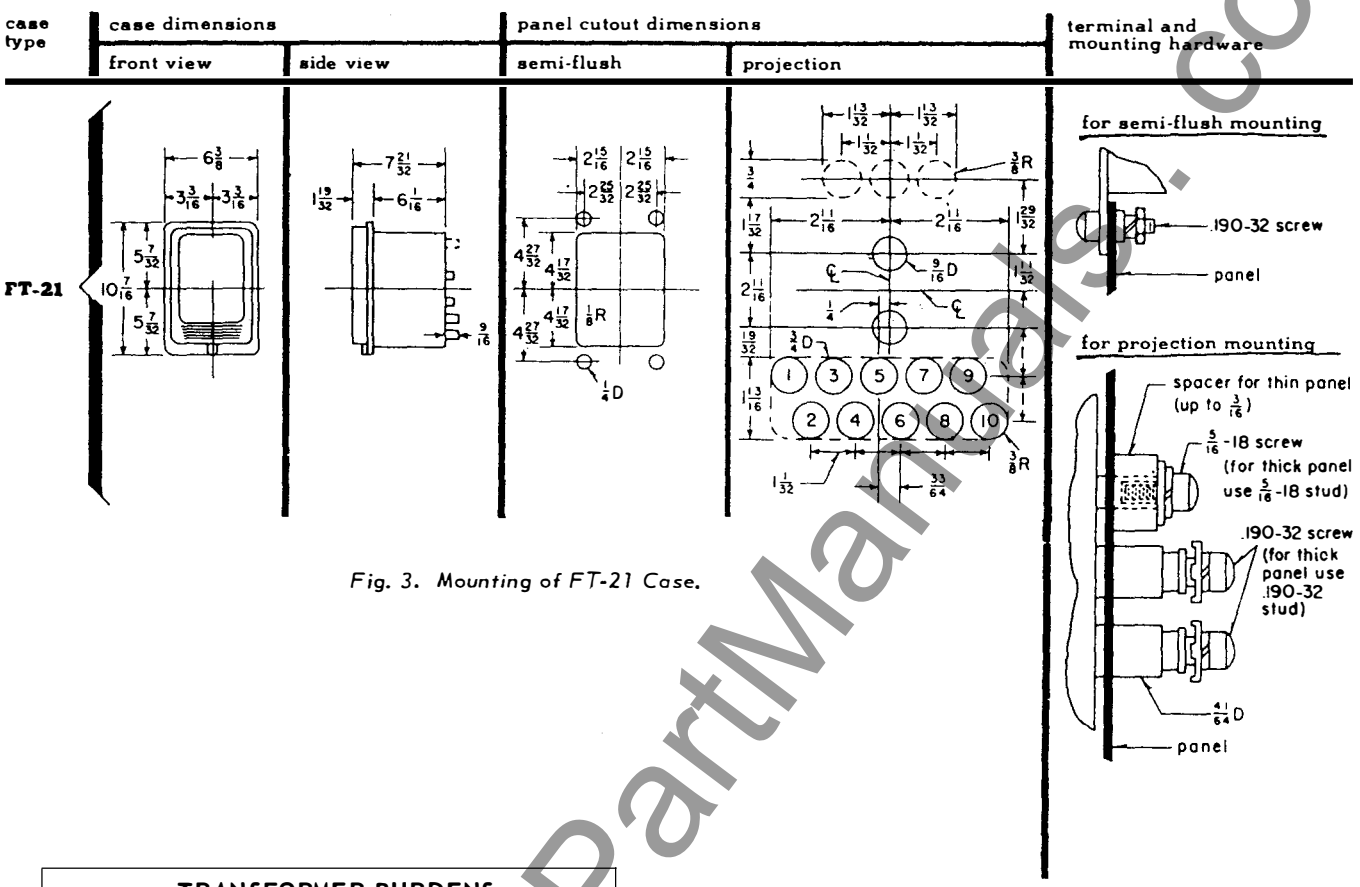

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FOR RATED MULTIPLES OF 120. V.	VOLT-AMPS.		8.65
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CURRENT COIL CIRCUITS			
EACH STATOR	FULL COIL	HALF COIL	Z CIRC.
5. AMPS. ON 5. AMP. COIL.			
VOLT-AMPS.	.39	.25	.39
WATTS	.29	.21	.29
POWER FACTOR	.75	.84	.75
5. AMPS. ON 2.5 AMP. COIL.			
VOLT-AMPS.	1.2	.65	1.2
WATTS	.64	.39	.64
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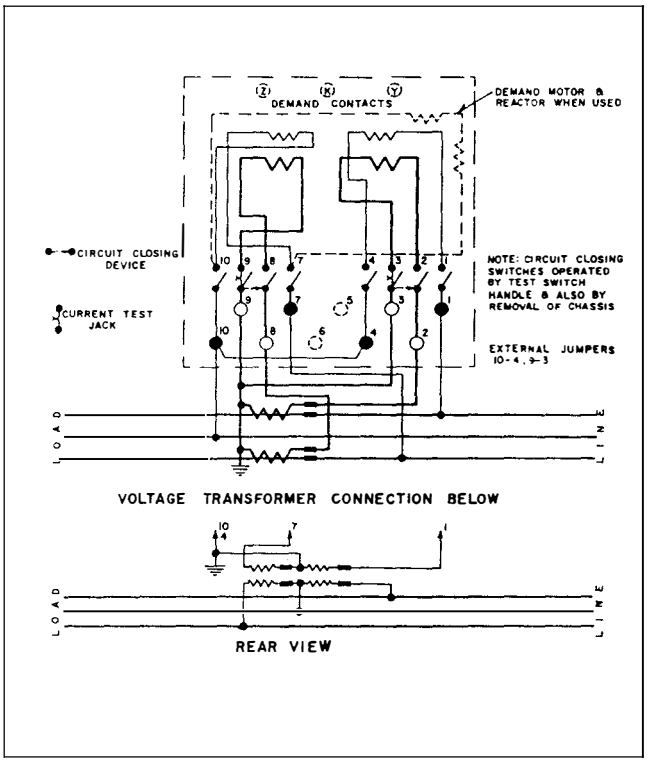

Fig. 4. Type D2B-2F, 3-Phase, 3 Wire.

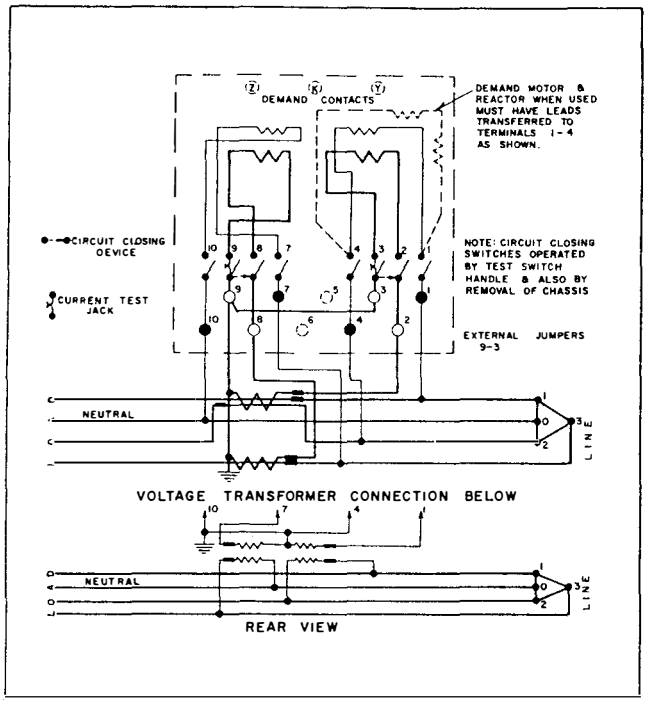

Fig. 5. Type D2B-2F, 3-Phase, 4-Wire, Delta

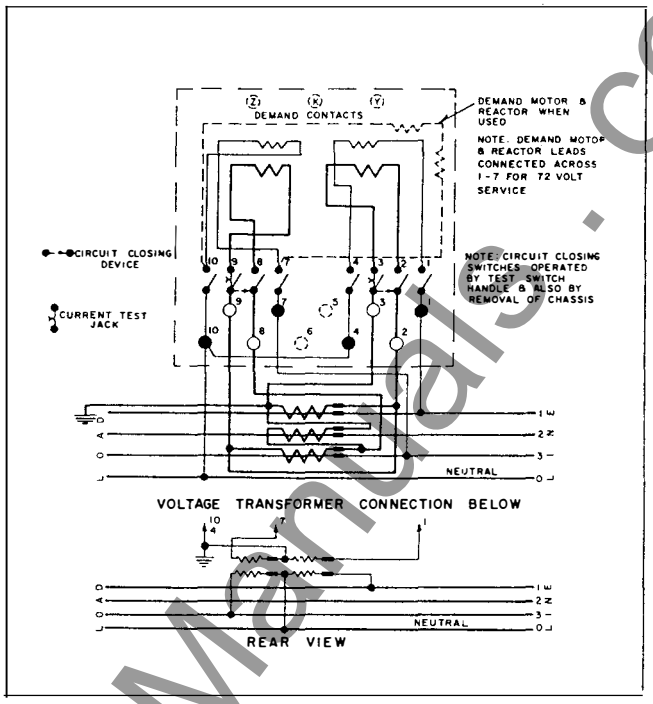

Fig. 6. Type D2B-2F, 3-Phase, 4- Wire, Wye.

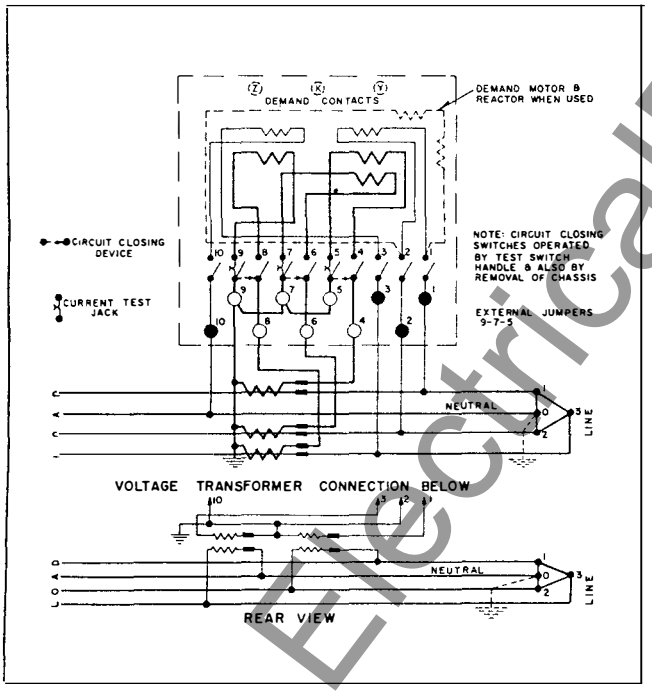

Fig. 7. Type D2B-7F, 3-Phase, 4-Wire, Delta

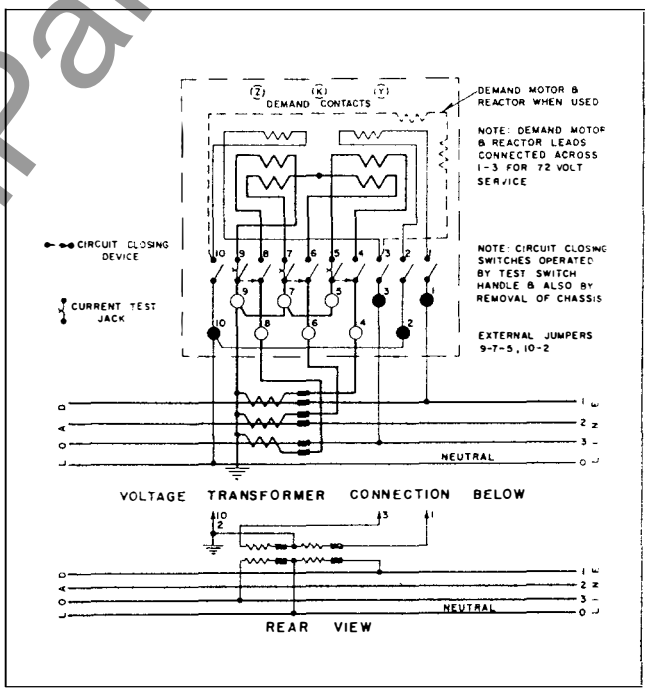

Fig. 8. Type D2B-8F, 3-Phase, 4-Wire, Wye

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METER DIVISION • **RALEIGH, N. C.**

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