INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

The operating and reset time of the type SG at rated voltage or current is 1 to 2 cycles (60 cycle basis.)

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should deflect about 3/64", measured at the contacts, or about 1/32", measured at the upper edge of the molded armature block.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

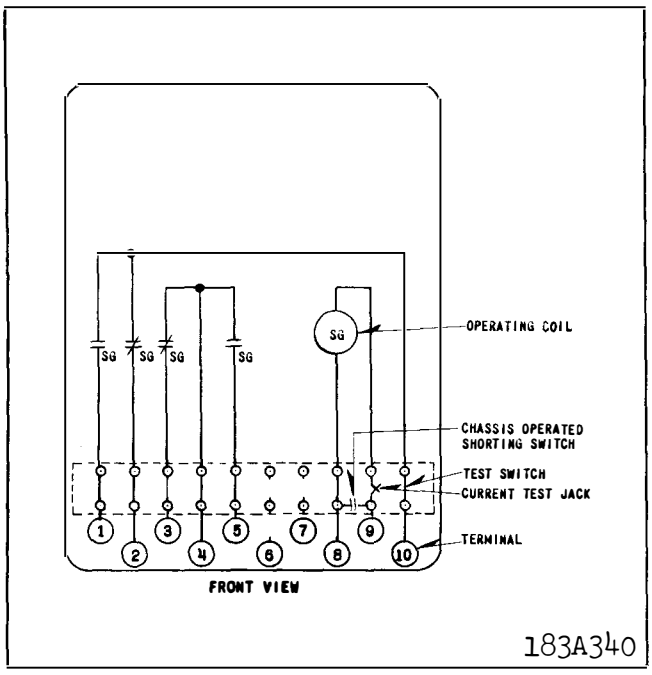


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.

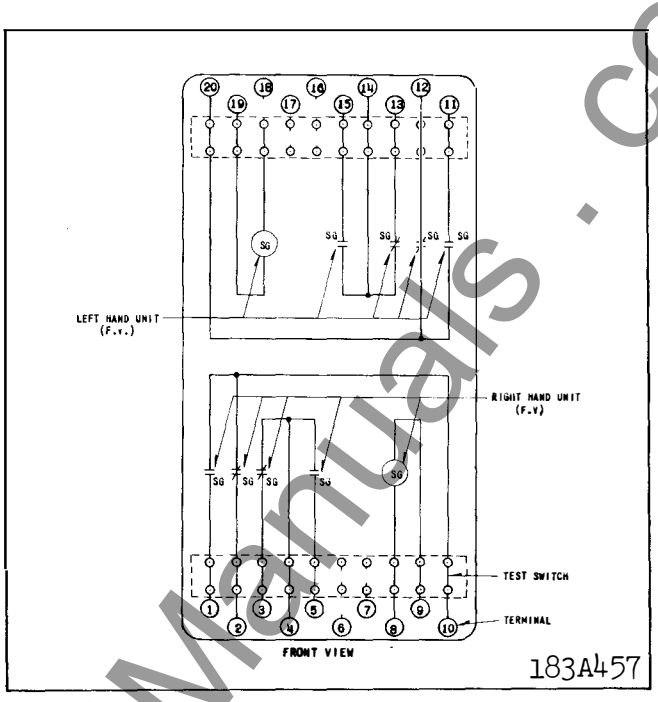


Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

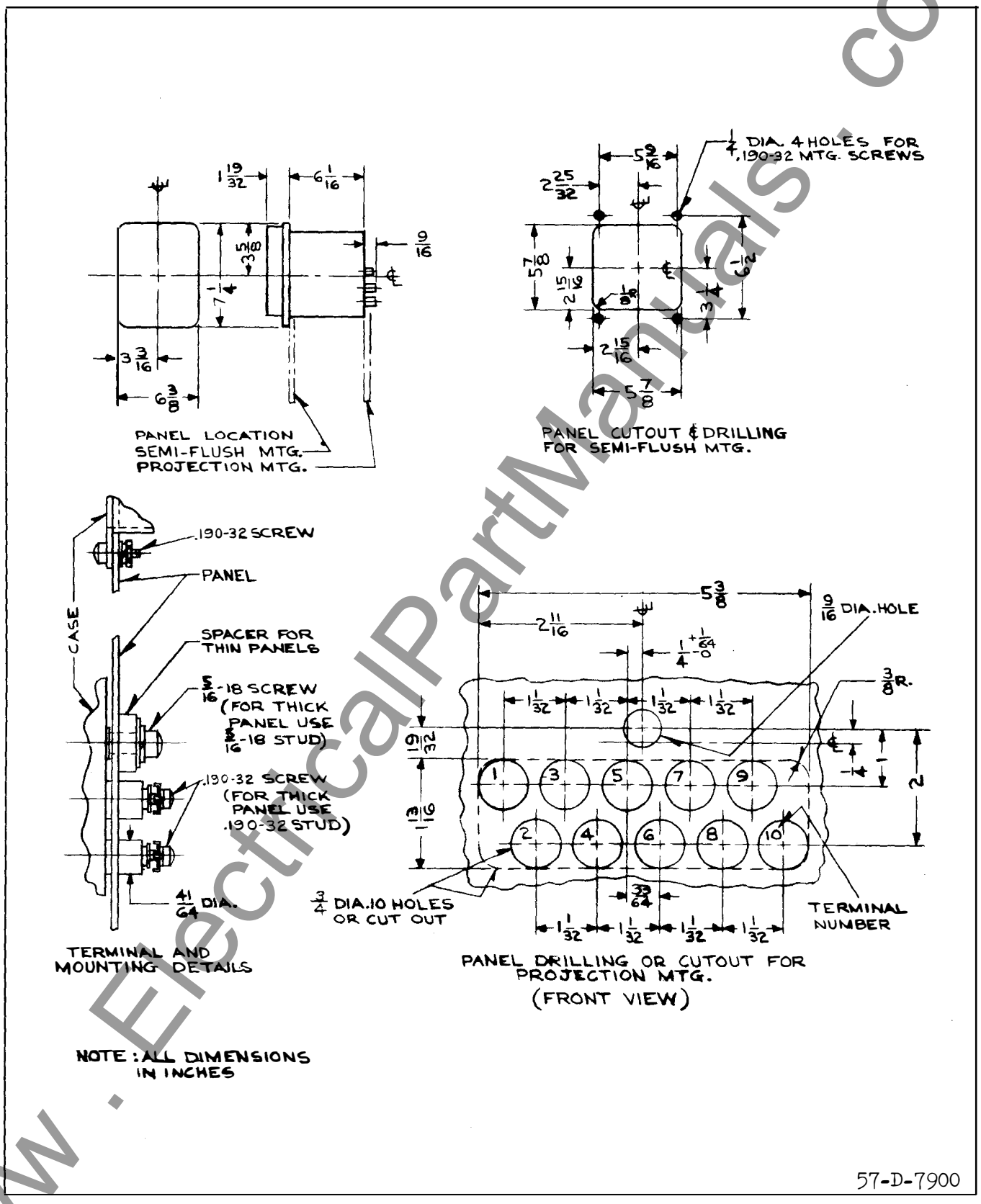


Fig. 3. Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

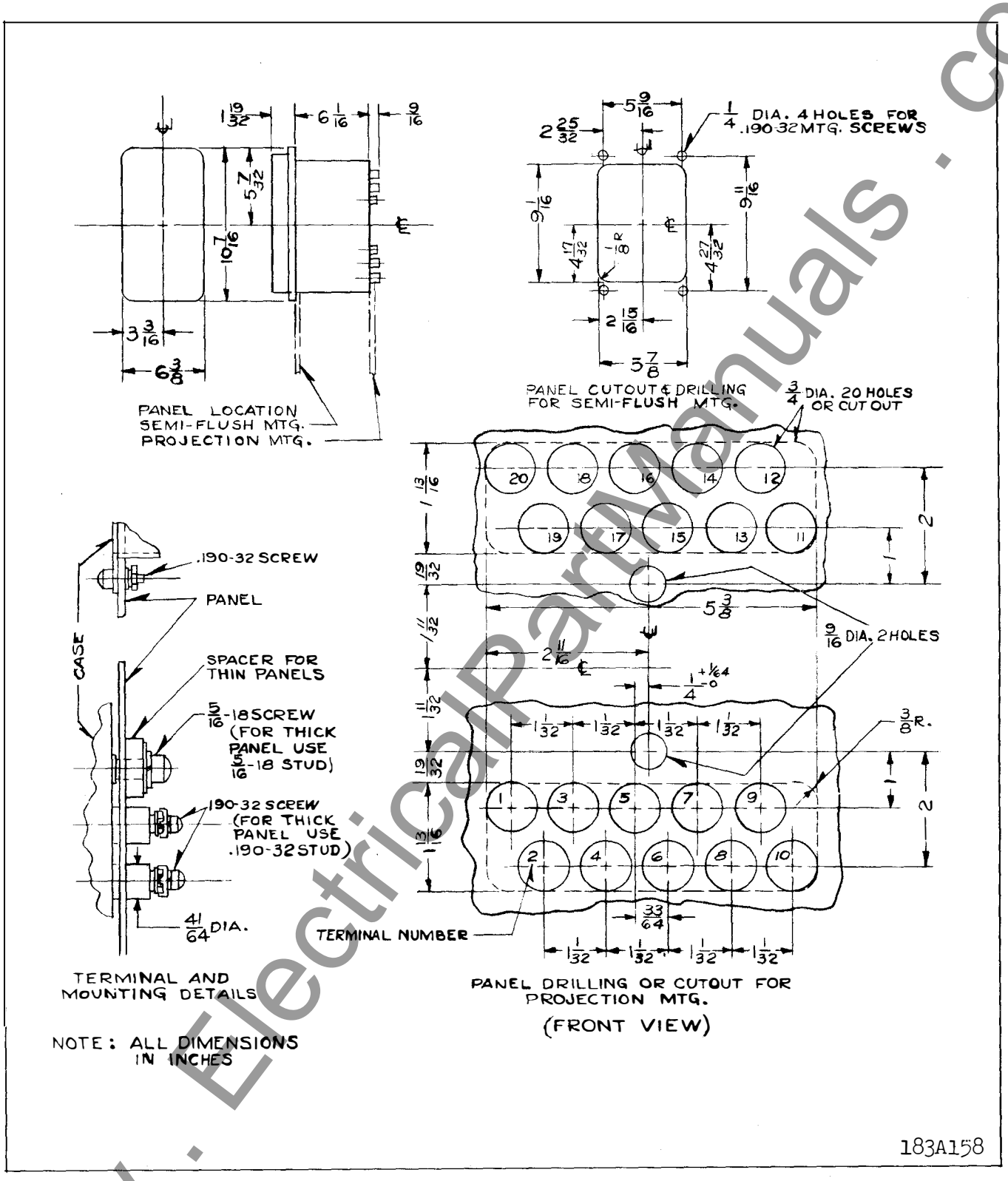


Fig. 4. Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to * I.L. 41-076.

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

The operating and reset time of the type SG at rated voltage or current is 1 to 2 cycles (60 cycle basis.)

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

APPLICATION

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should deflect about 3/64", measured at the contacts, or about 1/32", measured at the upper edge of the molded armature block. When the break contacts are closed, the gap between the stationary make and the moving contact should be 1/8" to 9/64". The stop at the bottom of the molded armature block should be set to allow 3/64" break contact follow at the contacts, or a 1/32" gap measured between the contact finger and the guide-bushing shoulder.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

SUPERSEDES I.L. 41-751.1
*Denotes change from superseded issue.

EFFECTIVE NOVEMBER 1958

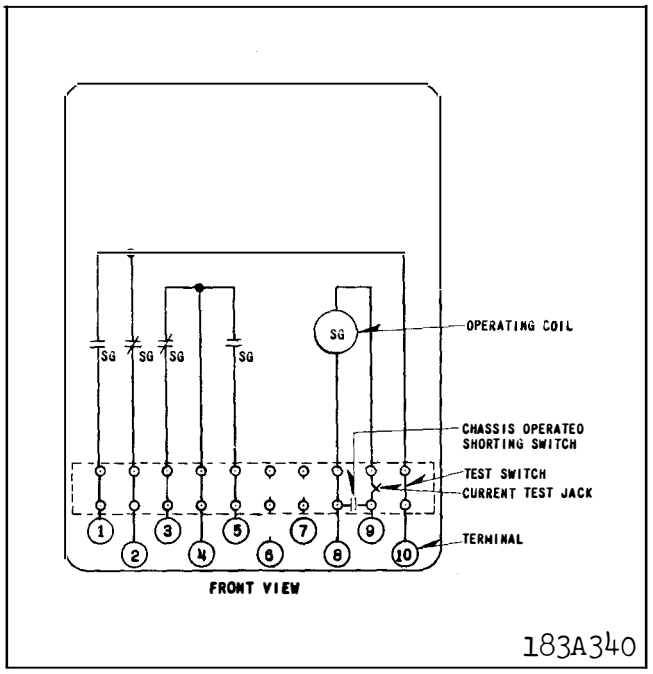


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.

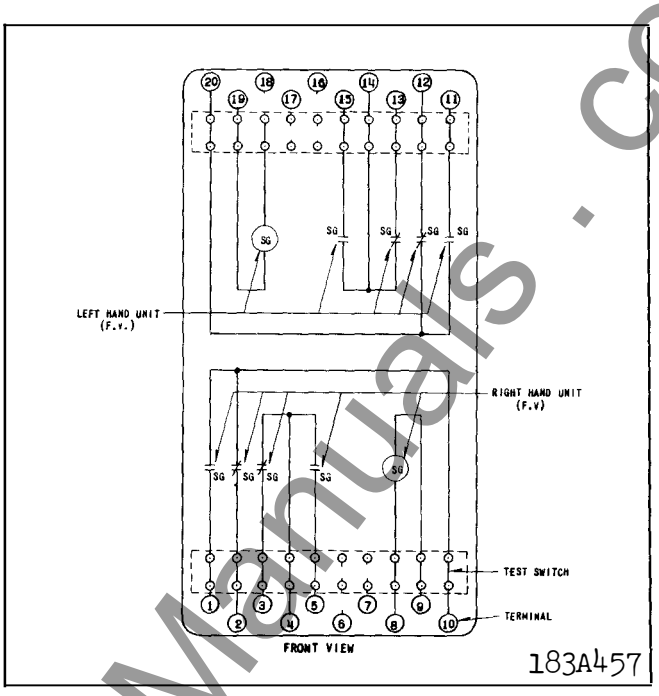


Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

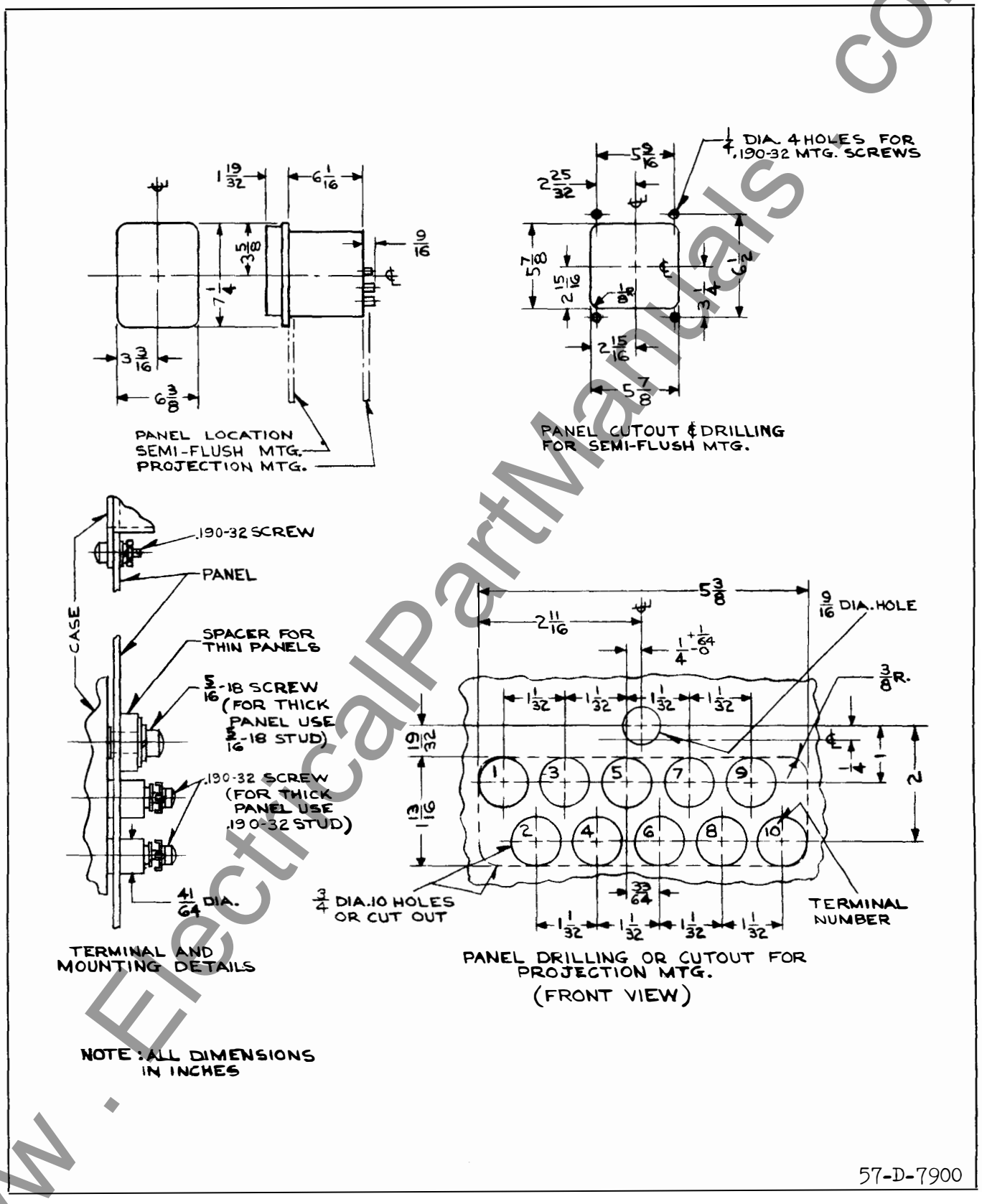


Fig. 3. Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

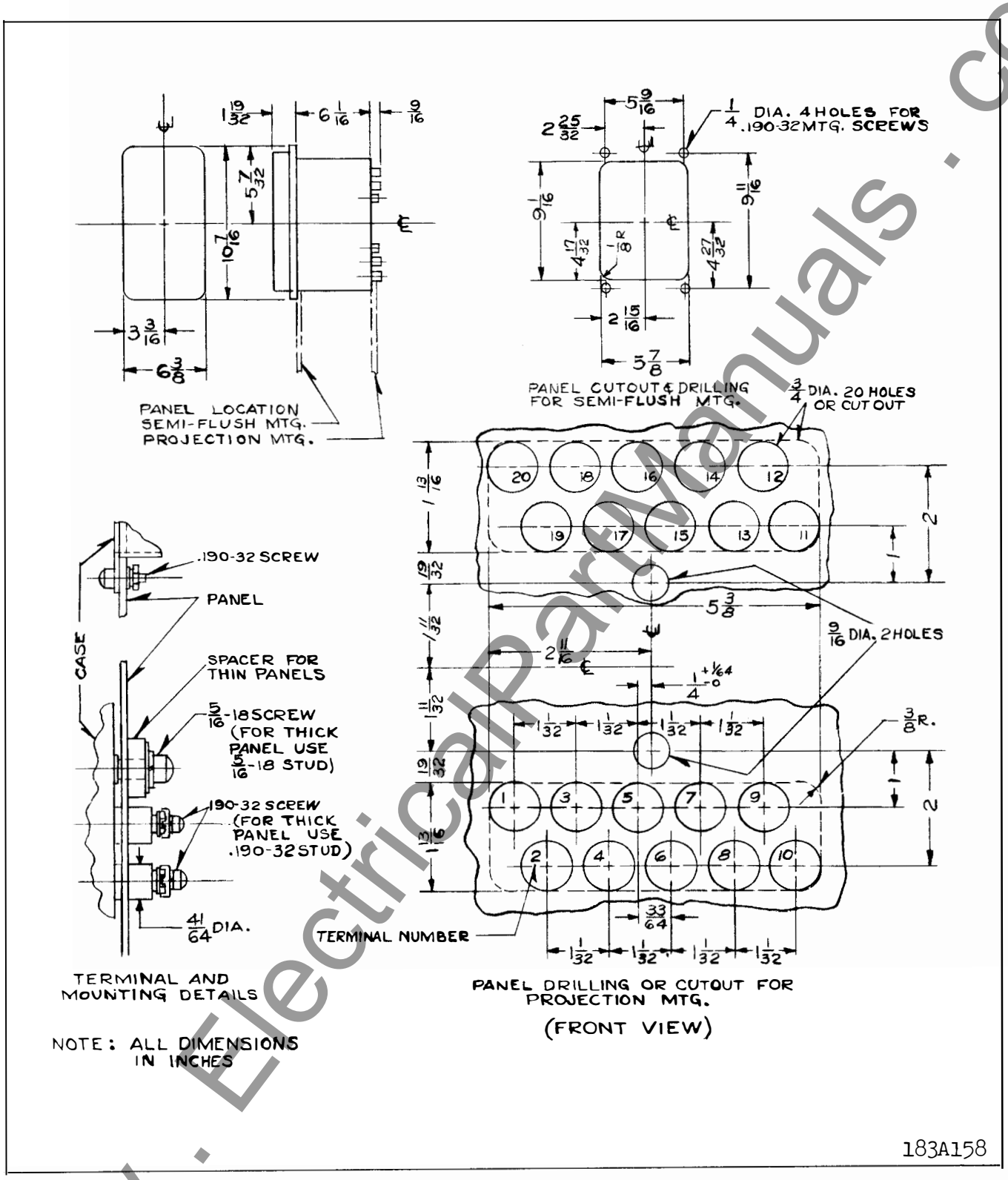


Fig. 4. Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

*APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should deflect about 3/64", measured at the contacts, or about 1/32", measured at the upper edge of the molded armature block. When the break contacts are closed, the gap between the stationary make and the moving contact should be 1/8" to 9/64". The stop at the bottom of the molded armature block should be set to allow 3/64" break contact follow at the contacts, or a 1/32" gap measured between the contact finger and the guide-bushing shoulder.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

SUPERSEDES I.L. 41-751.1A
*Denotes change from superseded issue.

EFFECTIVE APRIL 1959

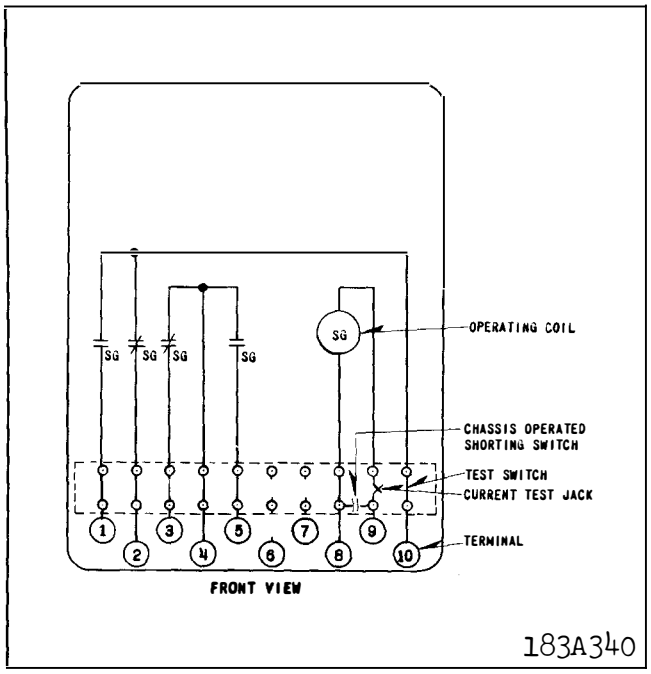
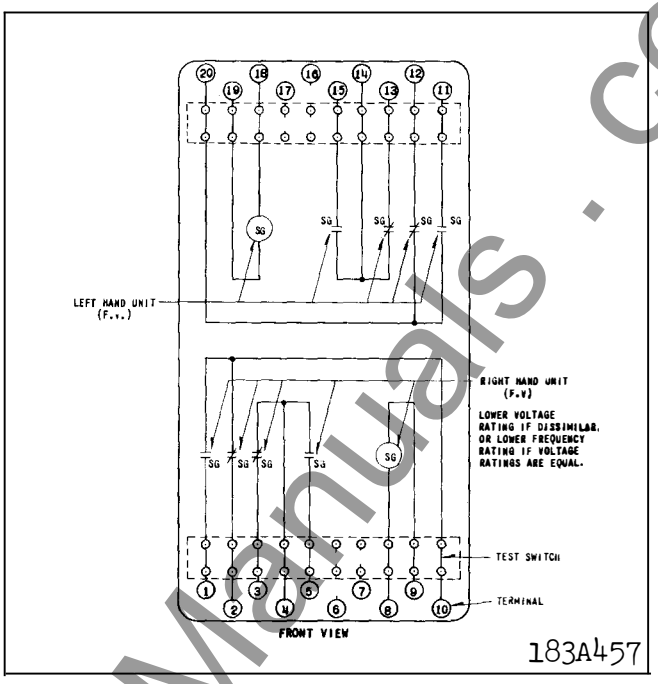


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.



* *Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.*

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

* **Operating Time**

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

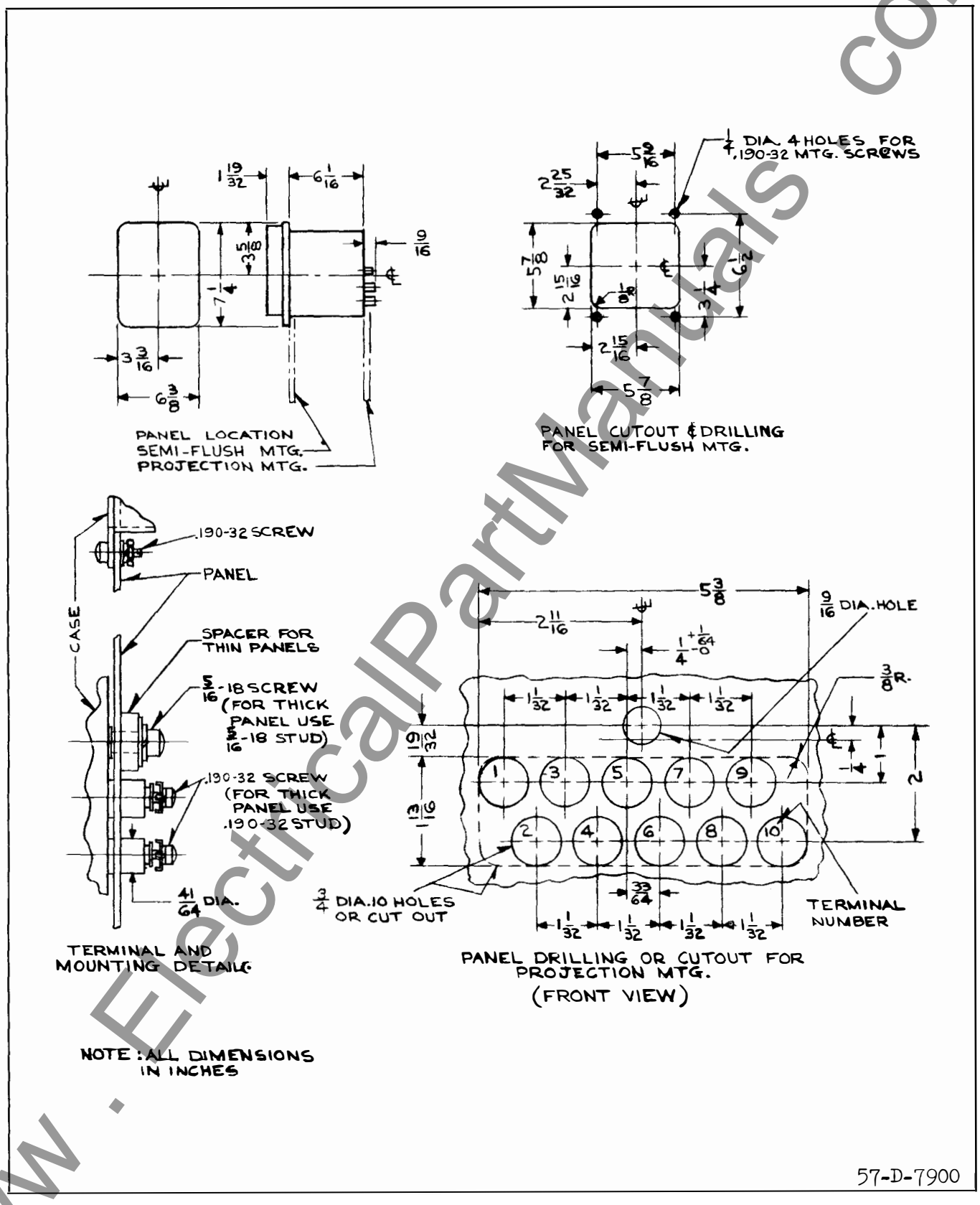


Fig. 3. Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

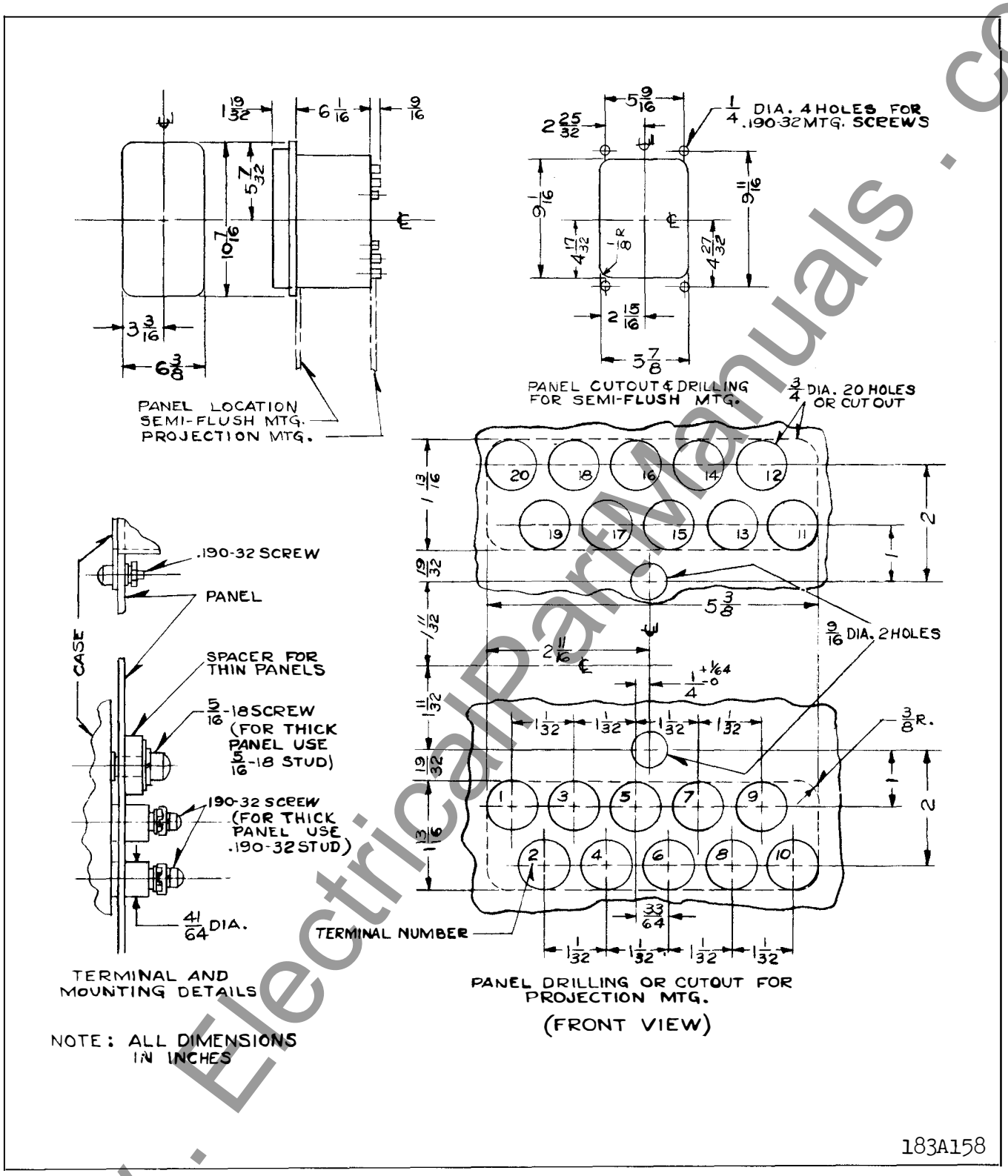


Fig. 4. Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

Inspect the relay carefully after unpacking to see that no damage has been done in shipment. Operate the relay by hand several times to see whether the moving element is properly aligned and free from friction. Check the nameplate rating to see that it agrees with conditions under which relay will be used. The SG for use on alternating current has a rectangular copper loop clamped in the top of the core, over which the coil is placed. The d-c relay has no loop, but has a small bronze button in the center of the core front to prevent the armature from being held closed by residual magnetism.

Mount the relay with the base against a vertical plane and with the contacts at the top.

Relays having a voltage rating which requires a resistor in series with the coil are supplied with a vitrified tube resistor which has heavy screw-type terminal lugs. The resistor is assembled on an insulated mounting stud by which it can be mounted either directly on a panel or any convenient bracket.

When sheet metal cabinets are ordered for open-type relays, the relays and cabinets are shipped separately. The relays can be assembled on the tapped mounting holes in the bottom of the case by means of the mounting screws which are provided. The cabinets have knockouts for conduit connections on top, bottom and sides.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts- 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

* OPERATING TIME

Pick-up: .033 - .05 sec. at d-c rating
.016 - .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

CONSTRUCTION

The standard relay is furnished in two forms: A front-connected, open-type and a rear-connected, enclosed-type. The operating elements are identical in the two types and consist of four parts: core, yoke, armature and coil.

The open-type relay normally is provided with two contacts and is shipped with both stationary contacts arranged to close when the relay is energized. However, either or both contacts can be converted quickly into a break contact merely by removing the screw which holds the stationary contact bracket and turning the bracket over. After tightening the screw, the contact bracket may be bent slightly with the fingers if necessary to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should be deflected approximately 3/64" measured at the contacts, or slightly over 1/32" measured at the upper edge of the molded armature block. The assembly of the moving contact fingers on the armature block

is arranged to provide spring follow with either make or break stationary contacts. The closed-type relay is provided with two make and two break stationary contacts with the moving contacts common, and the open-type relay is provided with such a contact arrangement for applications which require it.

When the break contacts are closed, the gap between the stationary make and the moving contact should be 1/8" to 9/64". The stop at the bottom of the molded armature block, should be set to allow 3/64" break contact follow at the contacts, or a 1/32 gap measured between the contact finger and the guide-bushing shoulder.

Relays for use on A-C are assembled with a thin bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism after the relay is de-energized. In case the relay should be dismantled, it is important that this washer be replaced on re-assembling it.

CHARACTERISTICS

All relays will pick up on 80% of the name-plate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt comsumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

INTERRUPTING RATING IN AMPERES

Volts	D-C 1 Contact	D-C 2 Contacts in Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

REPAIR AND RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire name-plate reading.

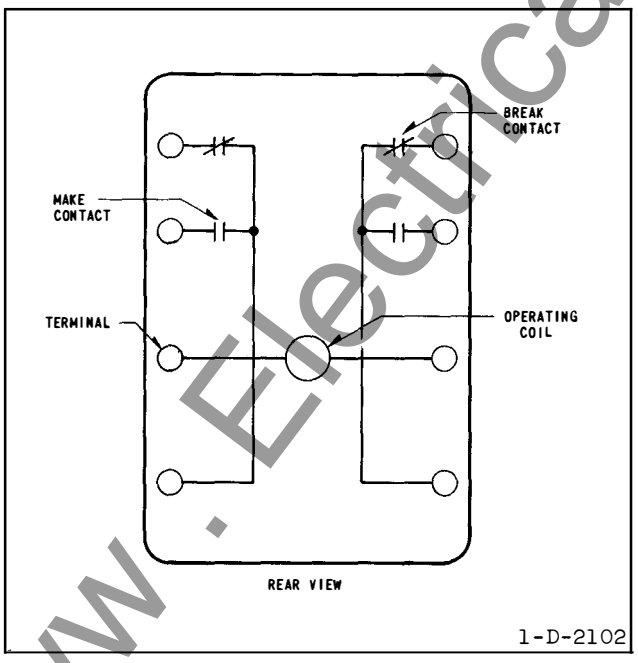


Fig. 1—Internal Connections for Closed Type SG Relay.

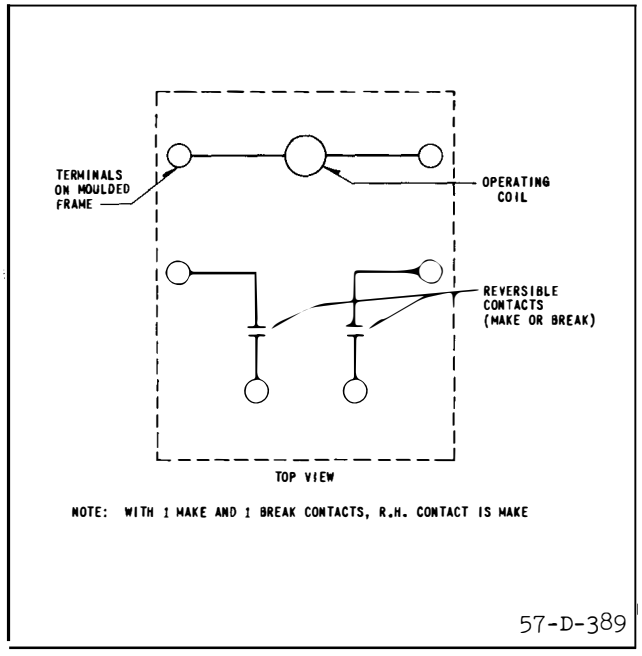


Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

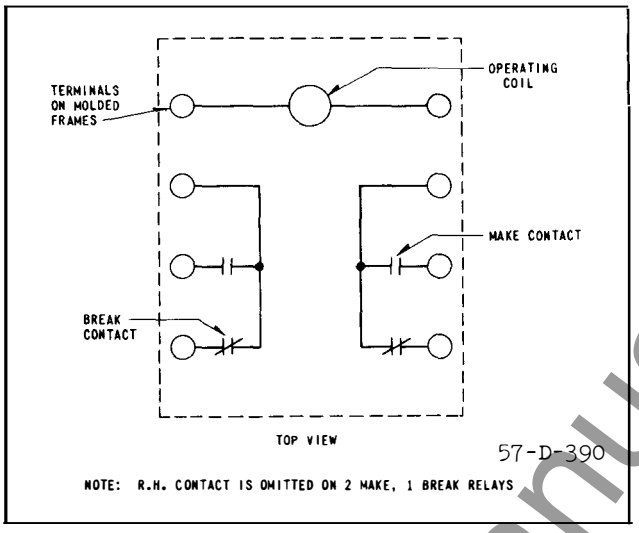


Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

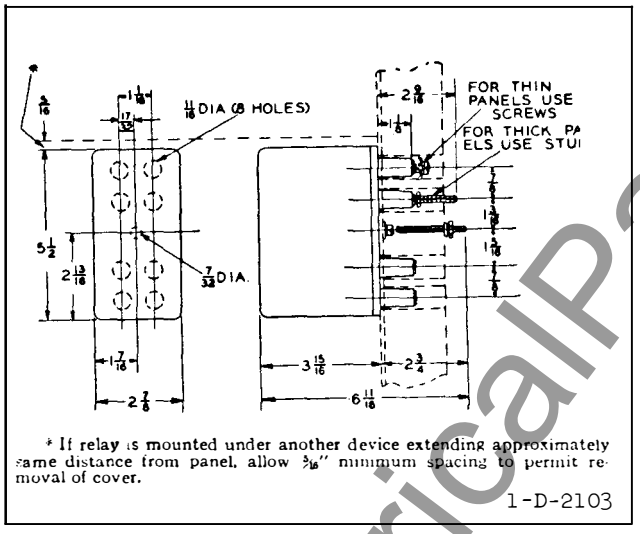


Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

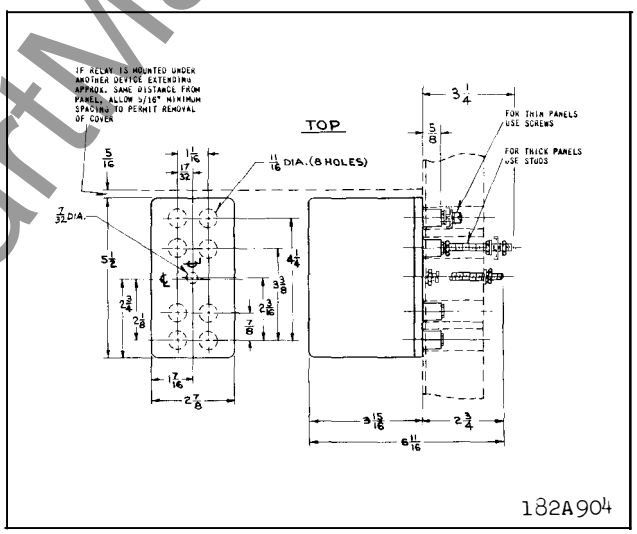


***Fig. 5—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.**

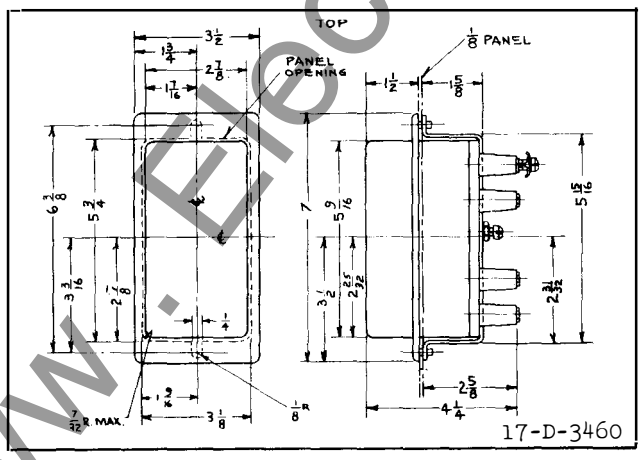


Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

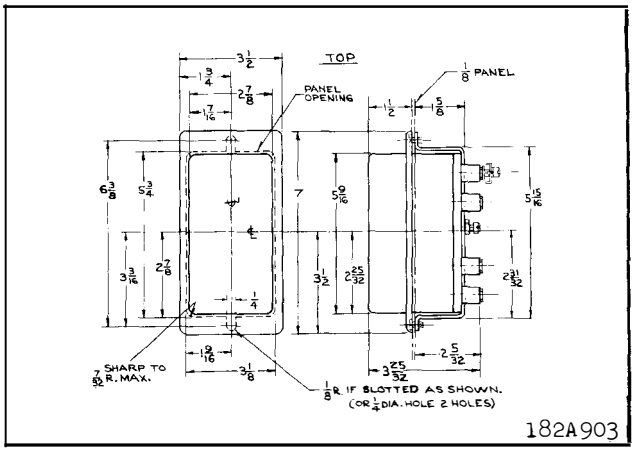
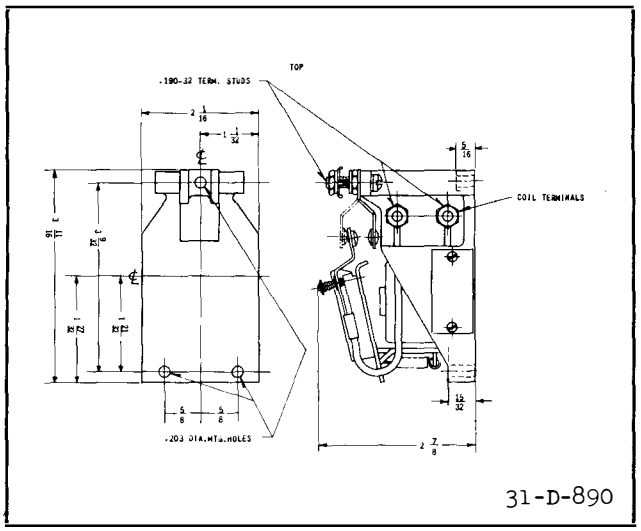
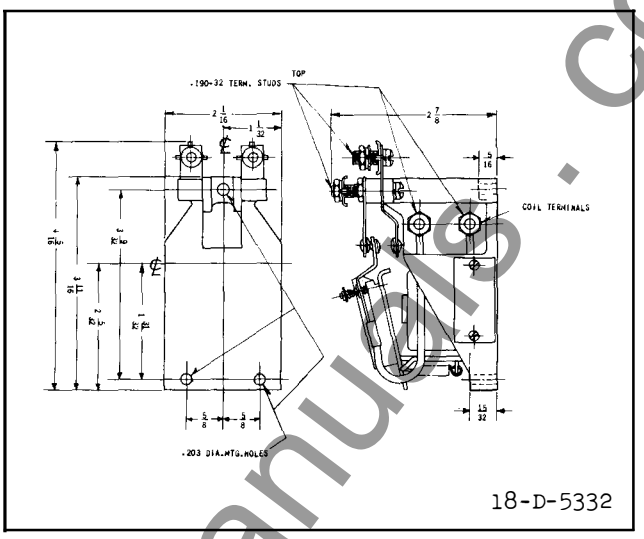


Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.



* Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



* Fig. 9—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

WESTINGHOUSE ELECTRIC CORPORATION
RELAY DEPARTMENT
NEWARK, N. J.
Printed in U. S. A.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. See Table I for proper contact adjustment.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

SUPERSEDES I.L. 41-751.1B
*Denotes change from superseded issue.

EFFECTIVE FEBRUARY 1962

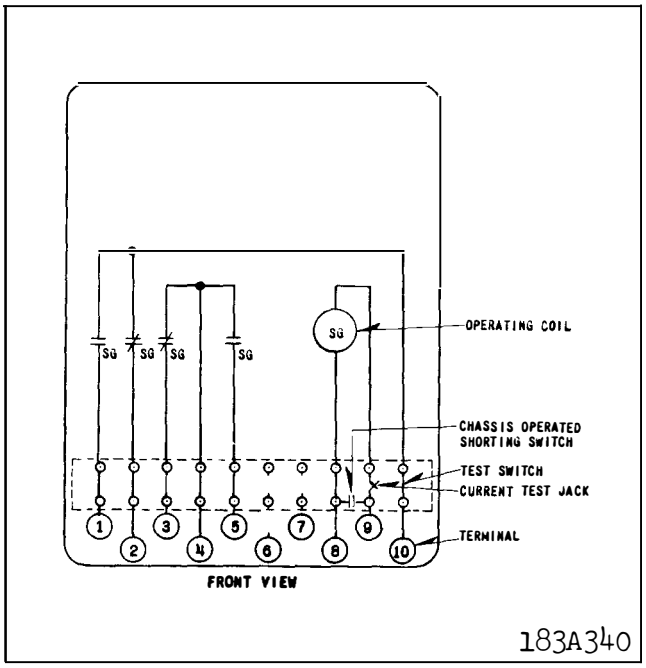
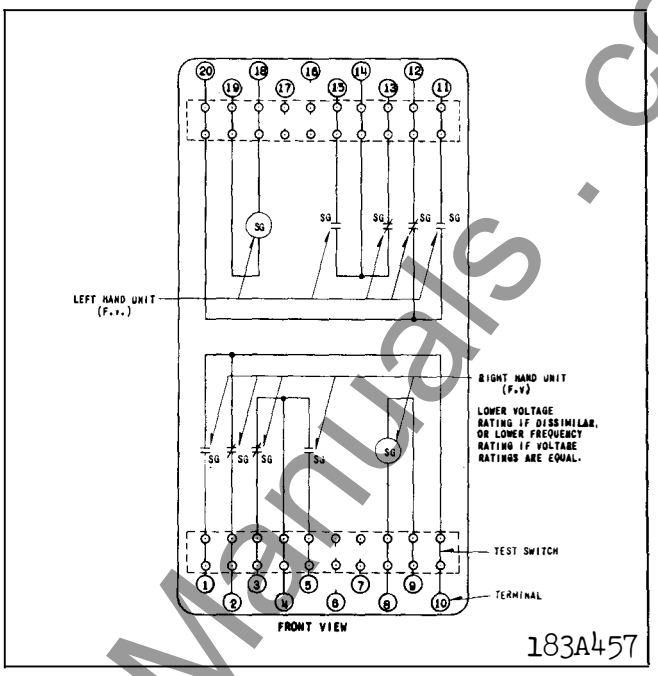


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.



* *Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.*

Operating Time

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

TABLE I

* CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make-Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
DPDT	1/8 - 9/64"	3/64"	3/64"	0.031"

(1) Measured at the contacts.

(2) Measured between the contact finger and the guide-bushing shoulder.

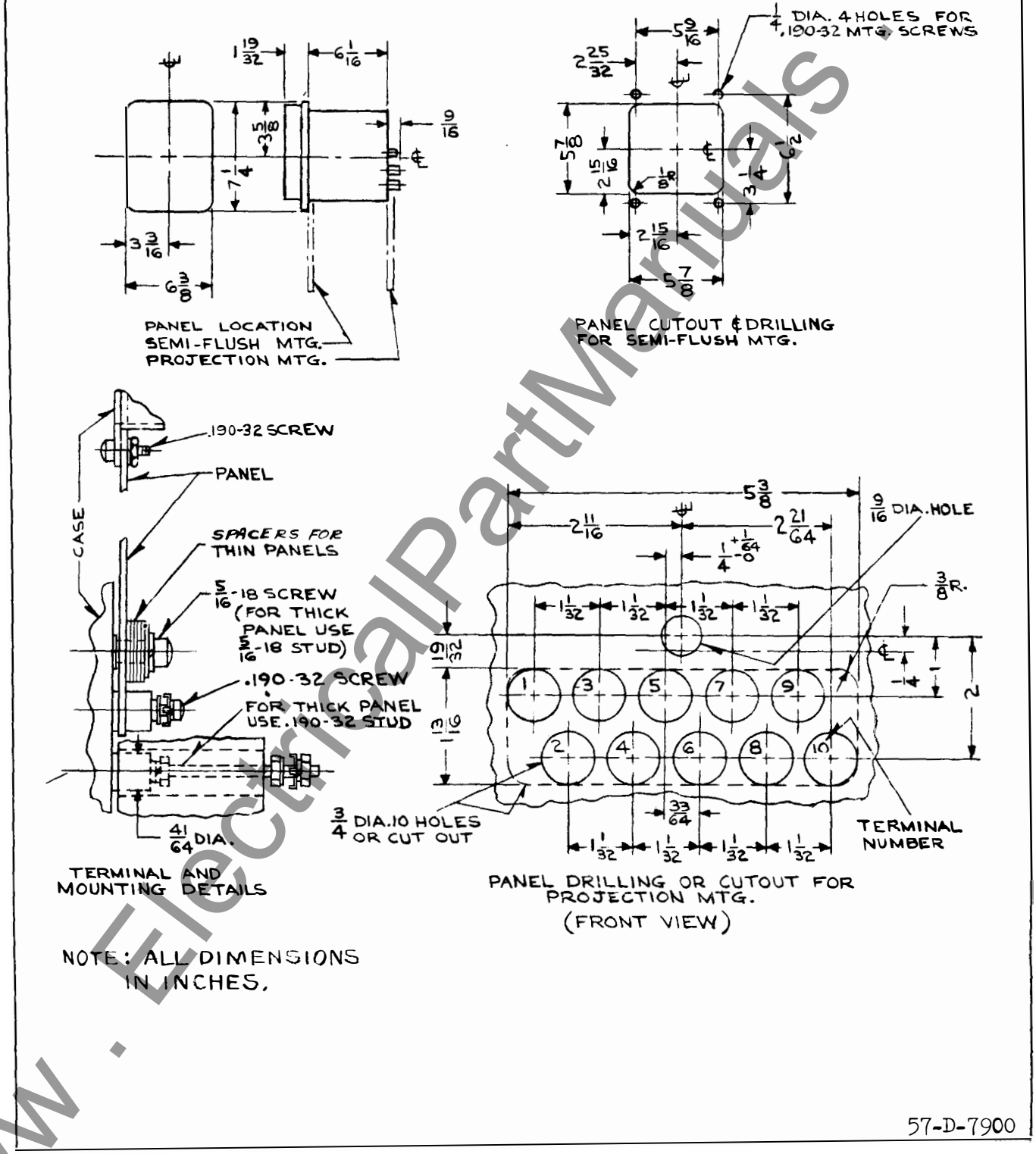


Fig. 3. Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

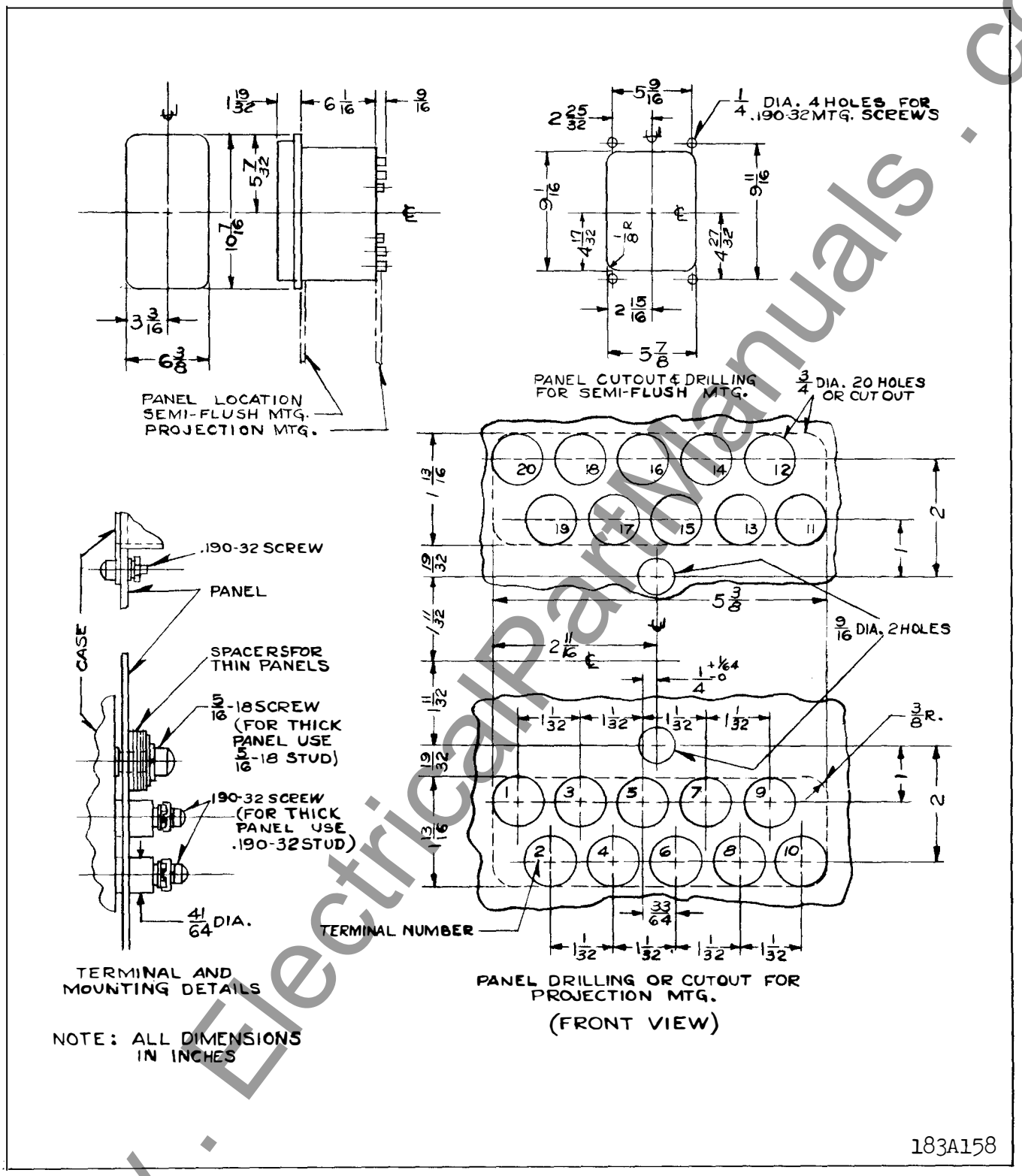


Fig. 4. Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

WESTINGHOUSE ELECTRIC CORPORATION
RELAY - INSTRUMENT DEPARTMENT **NEWARK, N. J.**
Printed in U. S. A.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. See Table I for proper contact adjustment.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
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115	2.4	20	30
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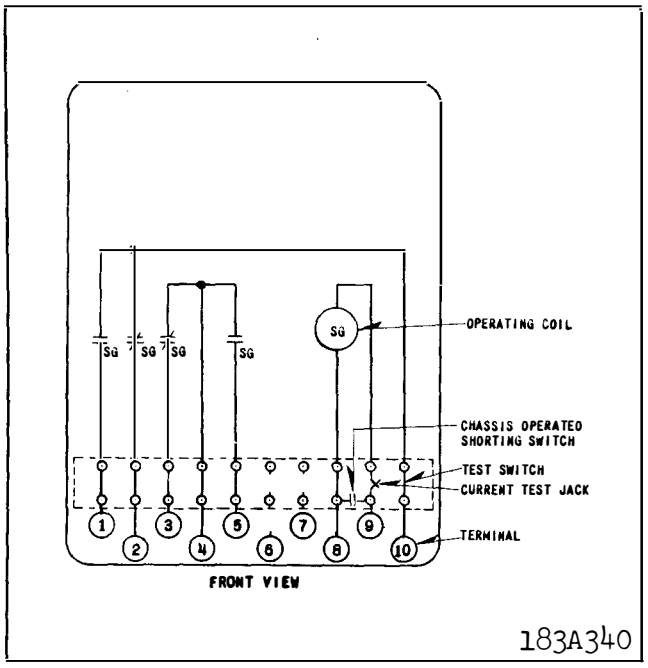
SUPERSEDES I.L. 41-751/1C
*Denotes change from superseded issue.

EFFECTIVE OCTOBER 1965



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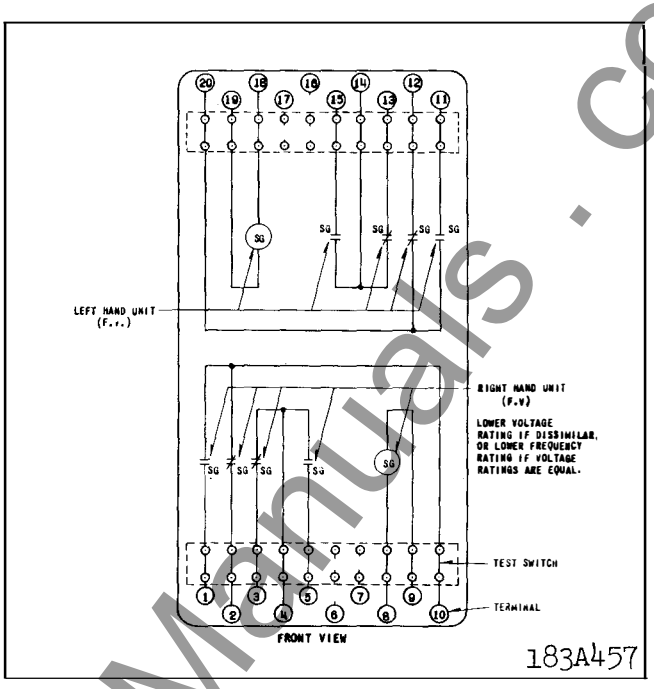

Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Operating Time

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

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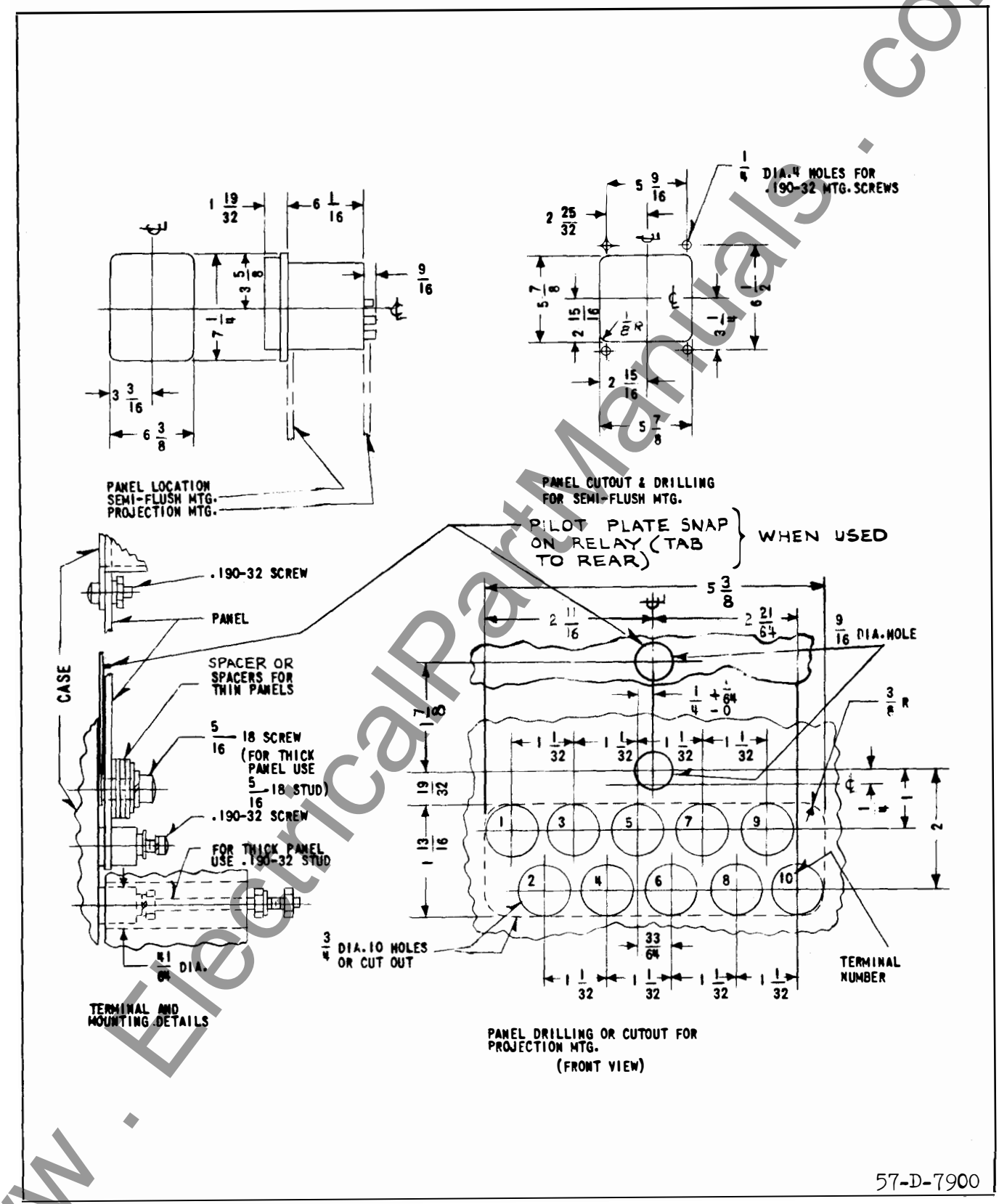

*Fig. 3 Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

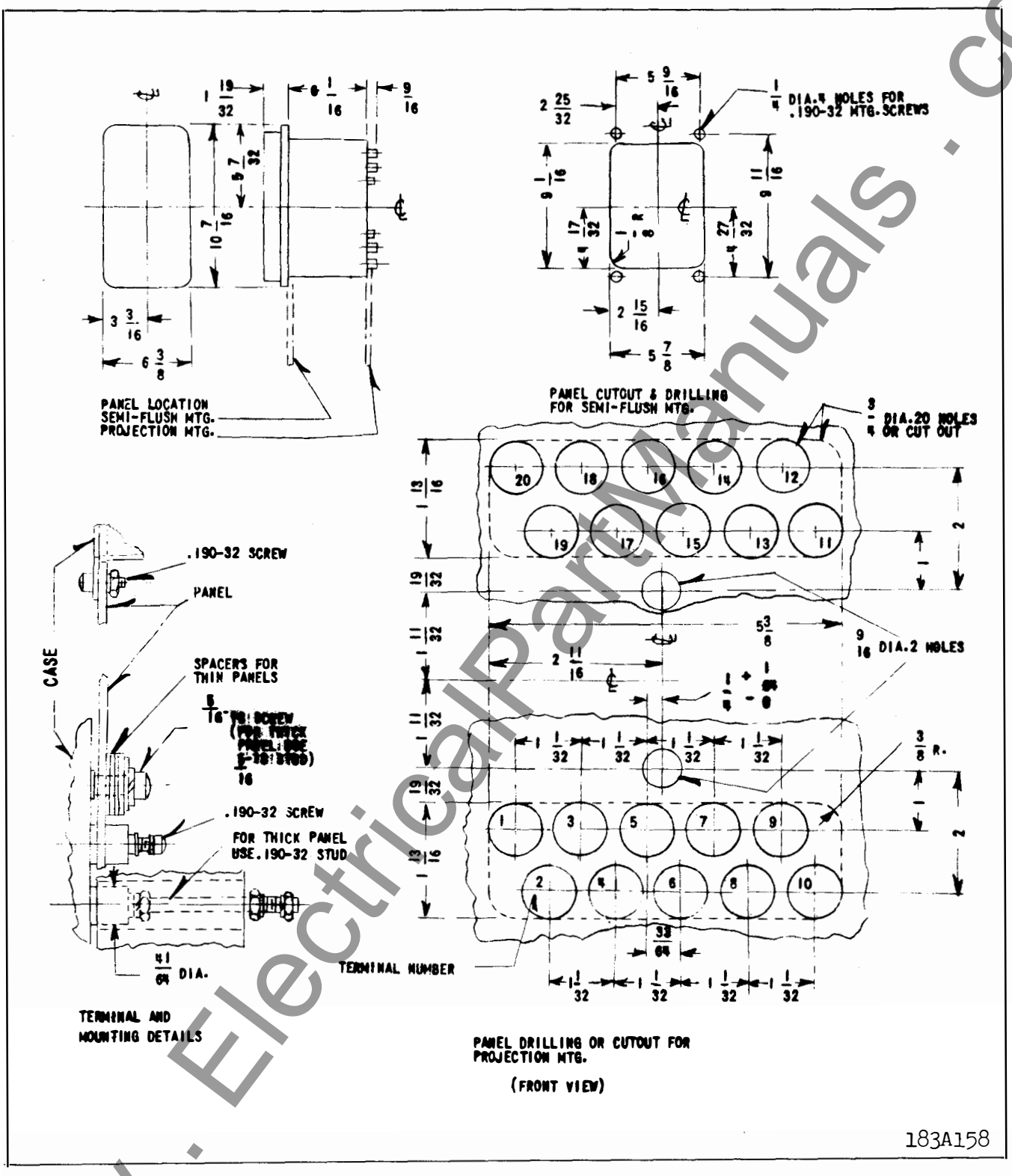

*Fig. 4 Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
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CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. See Table I for proper contact adjustment.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
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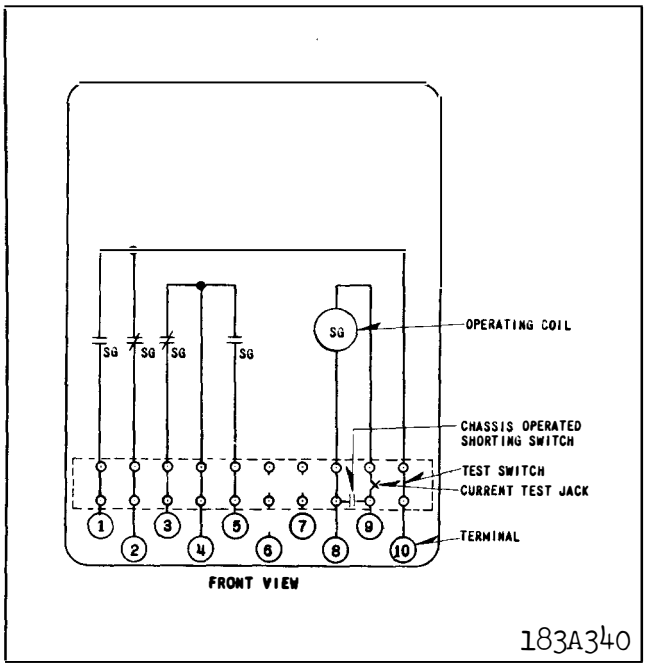
SUPERSEDES I.L. 41-751.1C
*Denotes change from superseded issue.

EFFECTIVE OCTOBER 1965



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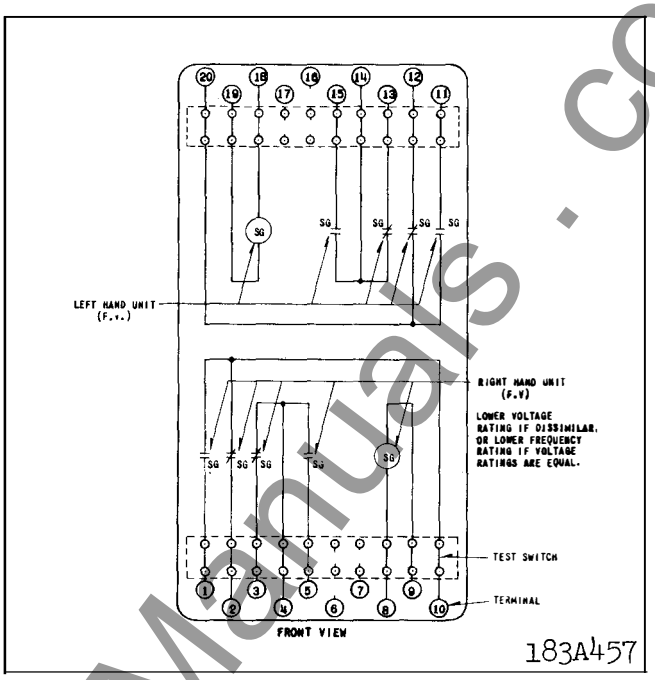

Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Operating Time

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

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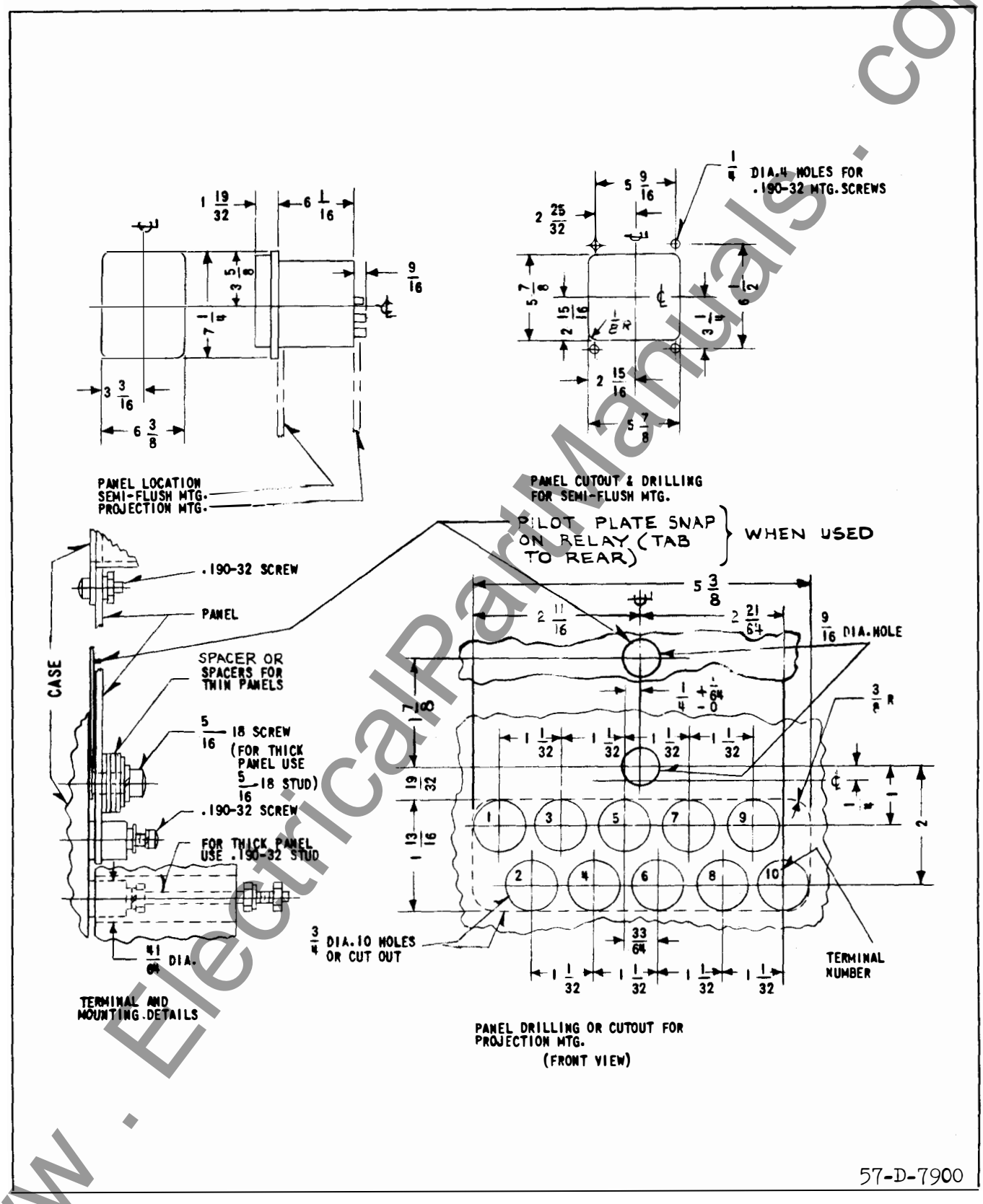


*Fig. 3 Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

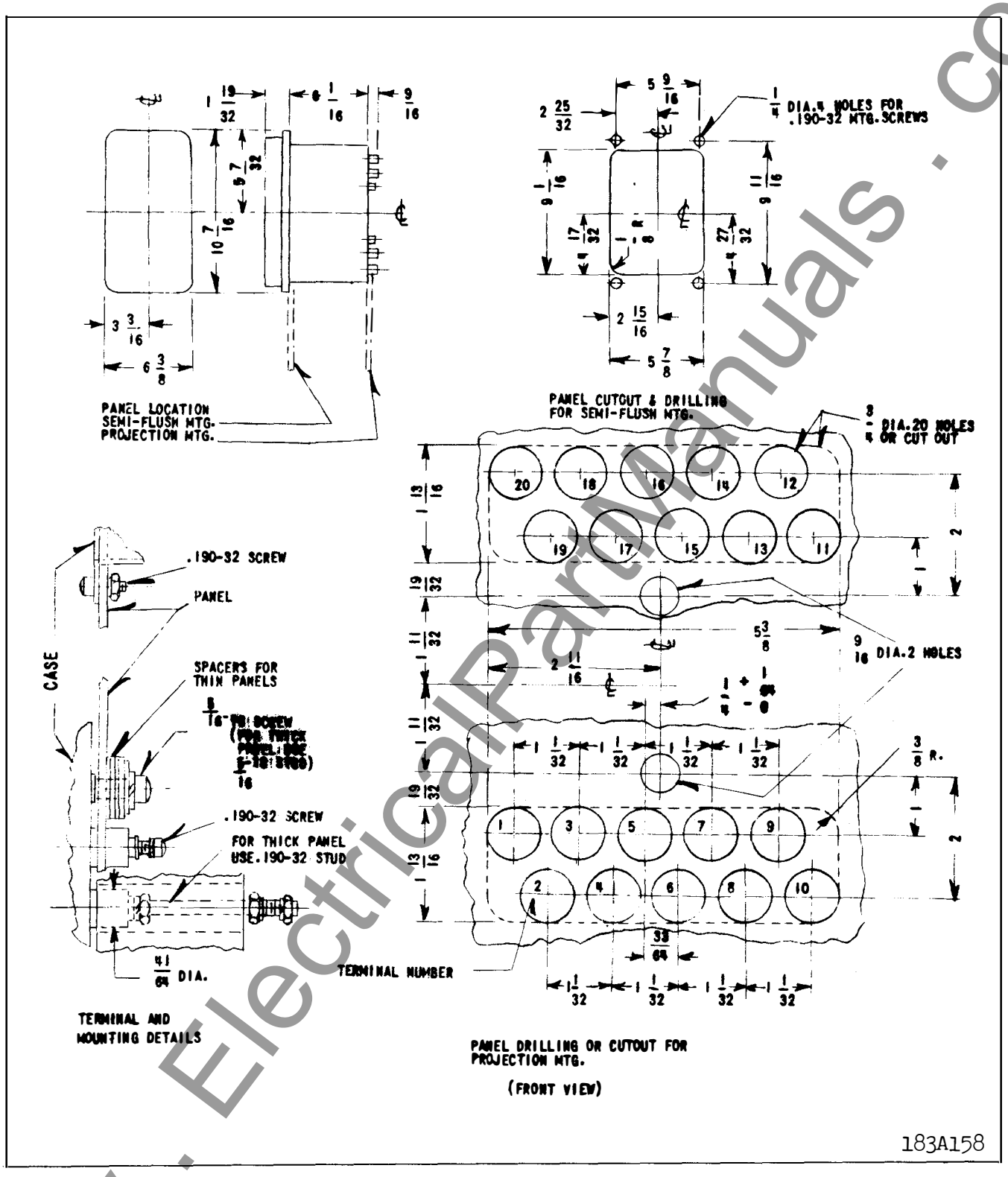


*Fig. 4 Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

WESTINGHOUSE ELECTRIC CORPORATION
RELAY-INSTRUMENT DIVISION **NEWARK, N. J.**
Printed in U.S.A.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

The operating and reset time of the type SG at rated voltage or current is 1 to 2 cycles (60 cycle basis.)

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should deflect about 3/64", measured at the contacts, or about 1/32", measured at the upper edge of the molded armature block.

CHARACTERISTICS

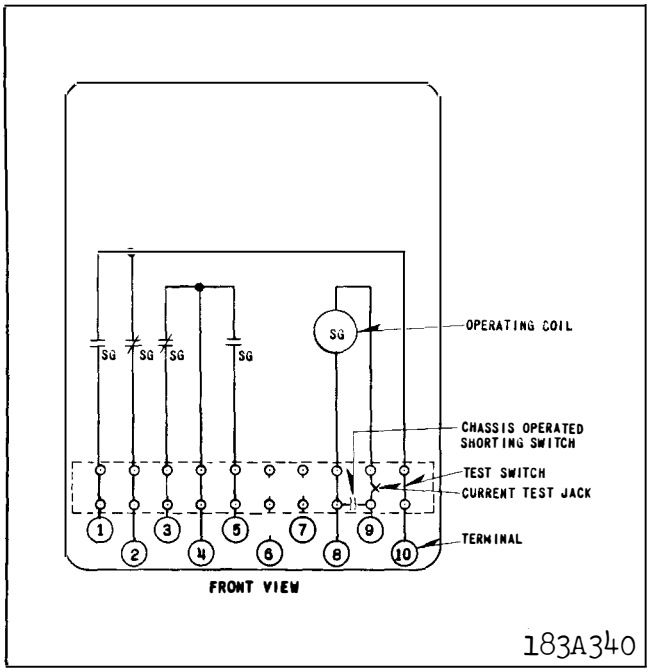
All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.



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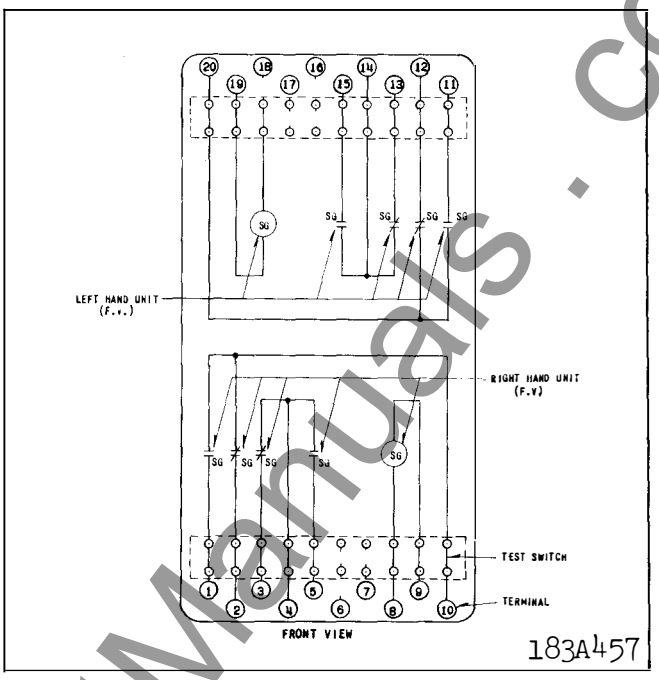

Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
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115	2.4	20	30
230	0.75	2.5	20
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RENEWAL PARTS

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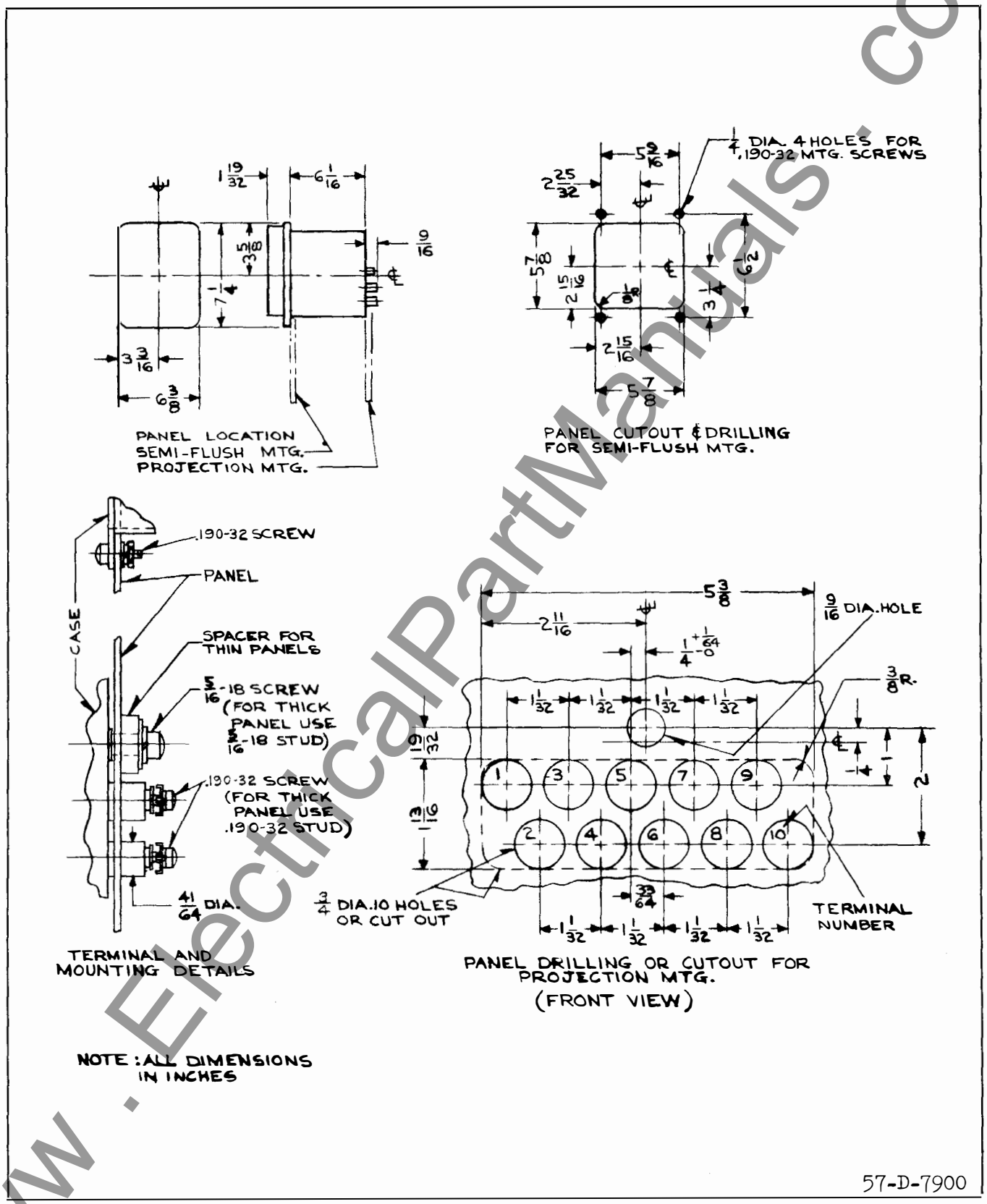

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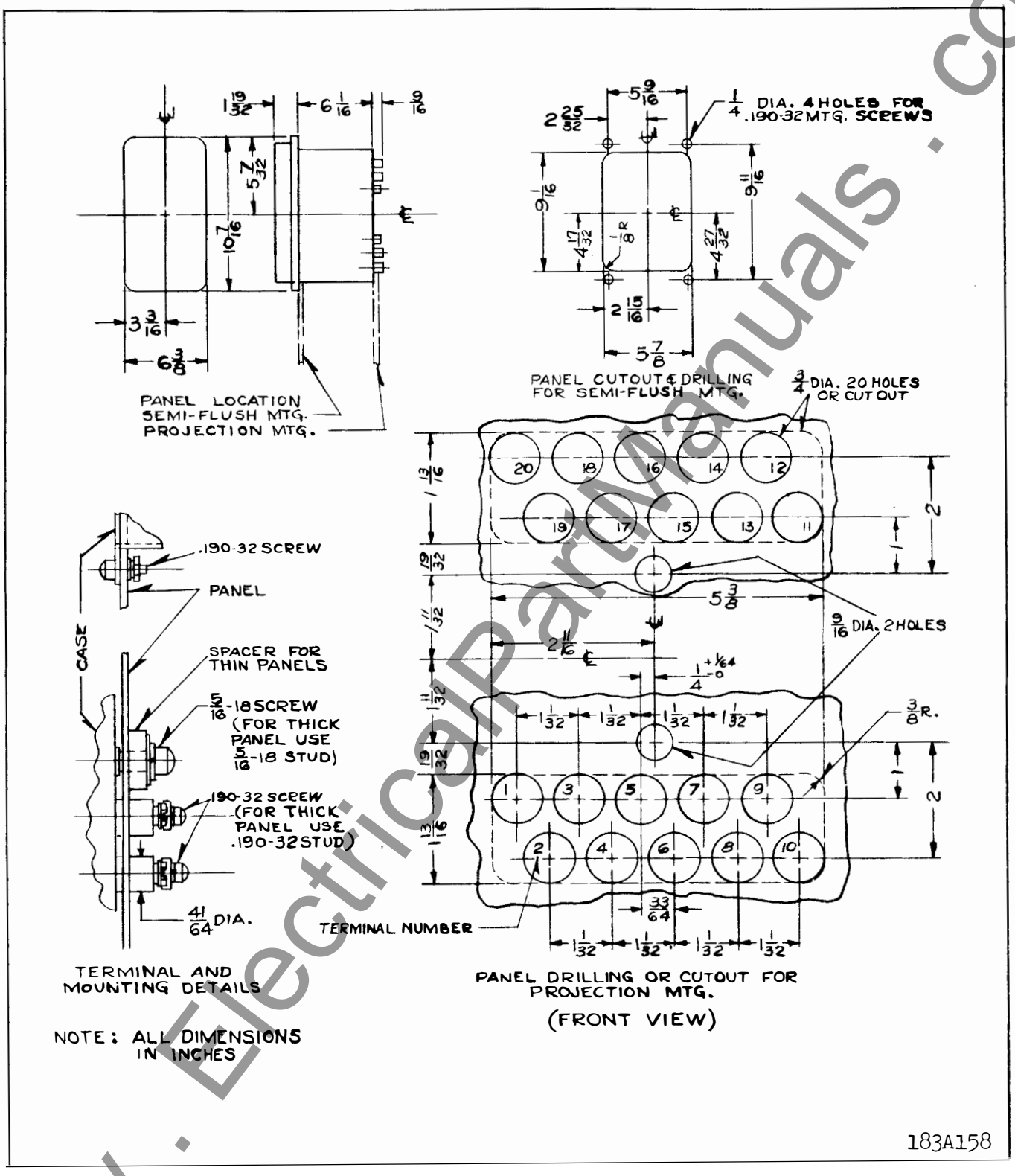

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

INSTALLATION

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For detailed FT case information refer to I.L. 41-076.

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

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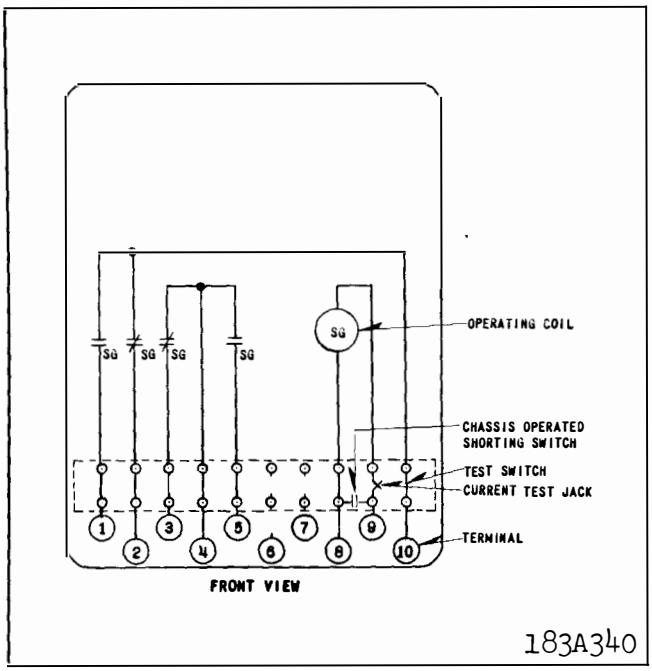

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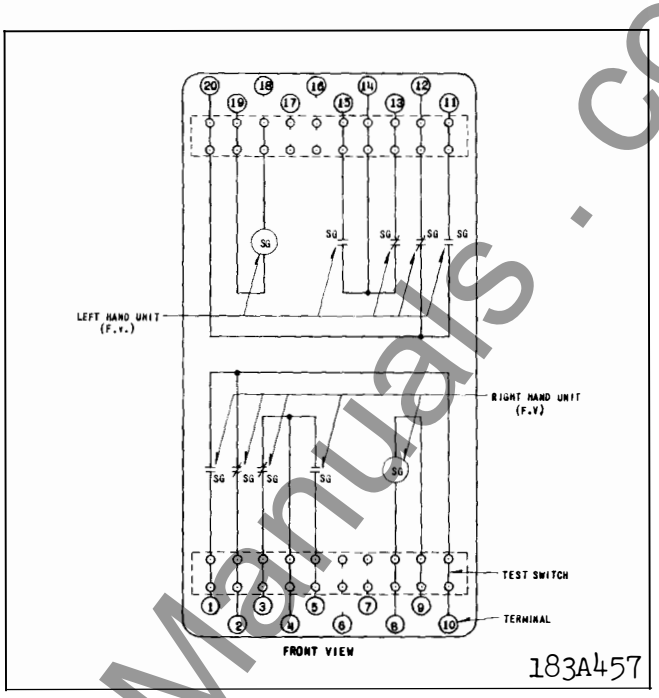

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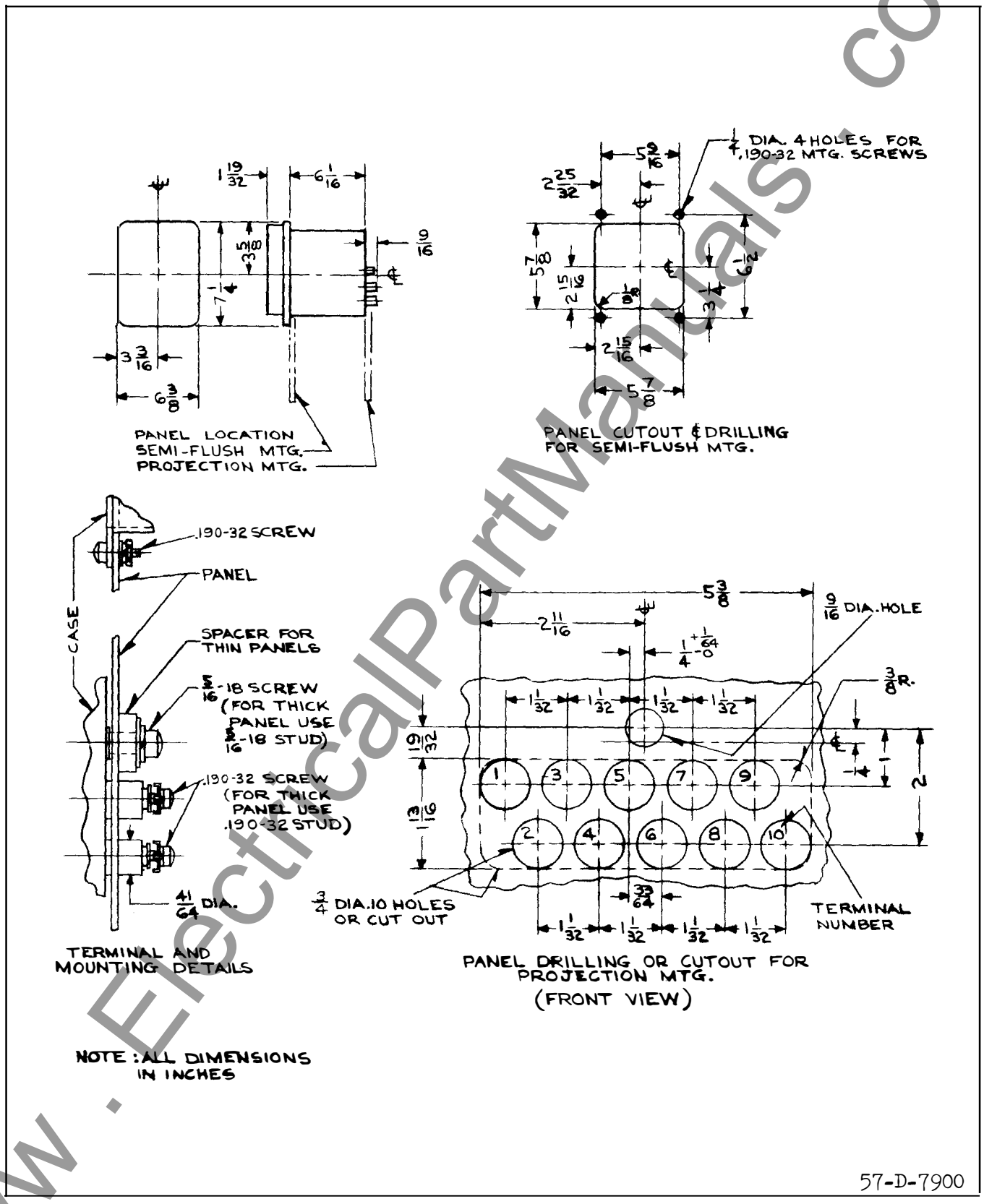

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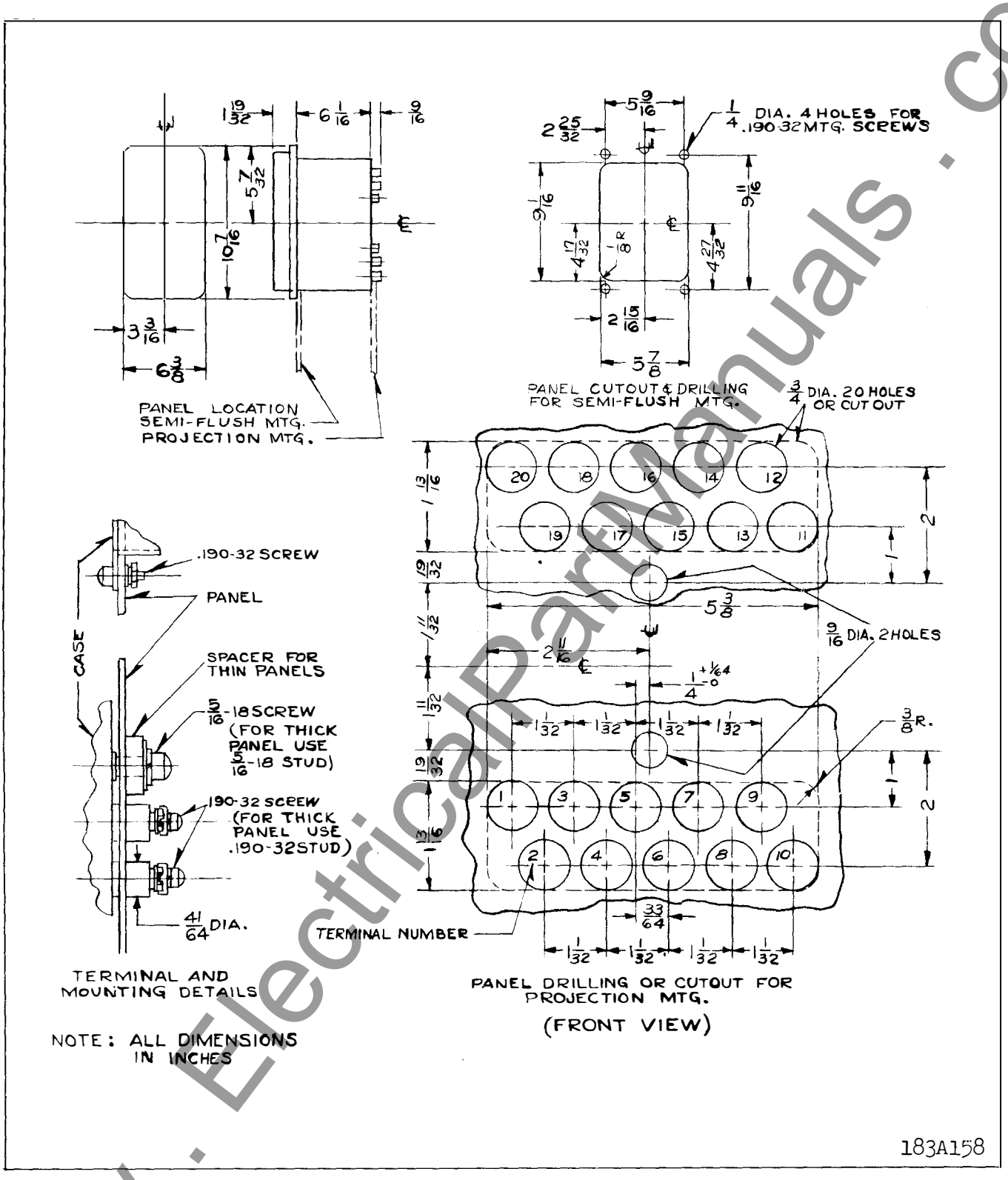

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

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The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer helps to prevent the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. When the make contacts are closed, the moving contact fingers should deflect about 3/64", measured at the contacts, or about 1/32", measured at the upper edge of the molded armature block. When the break contacts are closed, the gap between the stationary make and the moving contact should be 1/8" to 9/64". The stop at the bottom of the molded armature block should be set to allow 3/64" break contact follow at the contacts, or a 1/32" gap measured between the contact finger and the guide-bushing shoulder.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

SUPERSEDES I.L. 41-751.1A
*Denotes change from superseded issue.

EFFECTIVE APRIL 1959

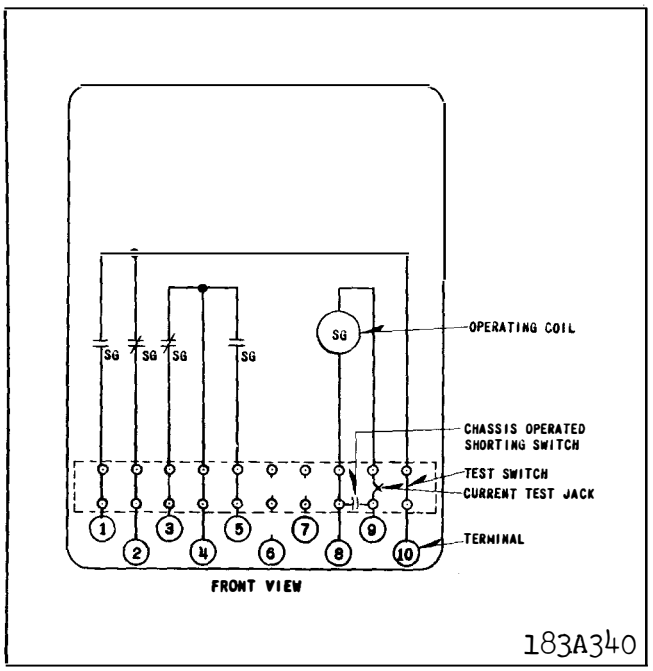
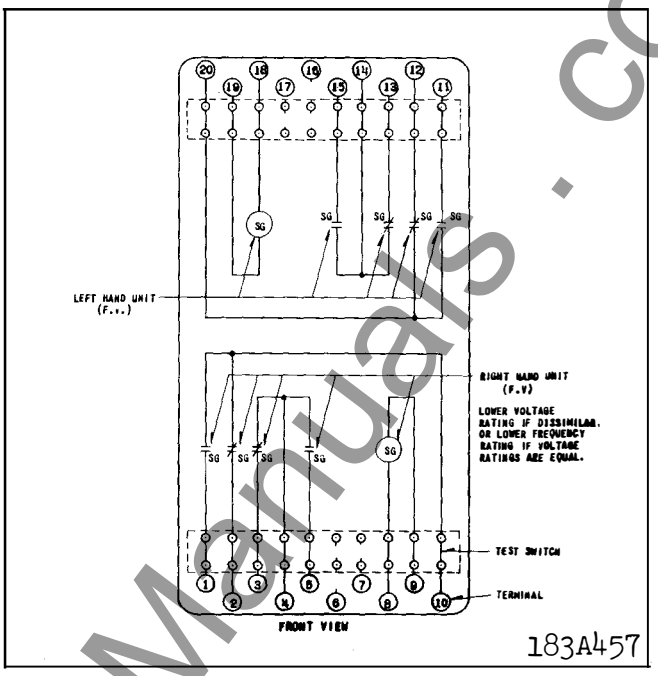


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.



* *Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.*

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

Operating Time

*

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out: less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

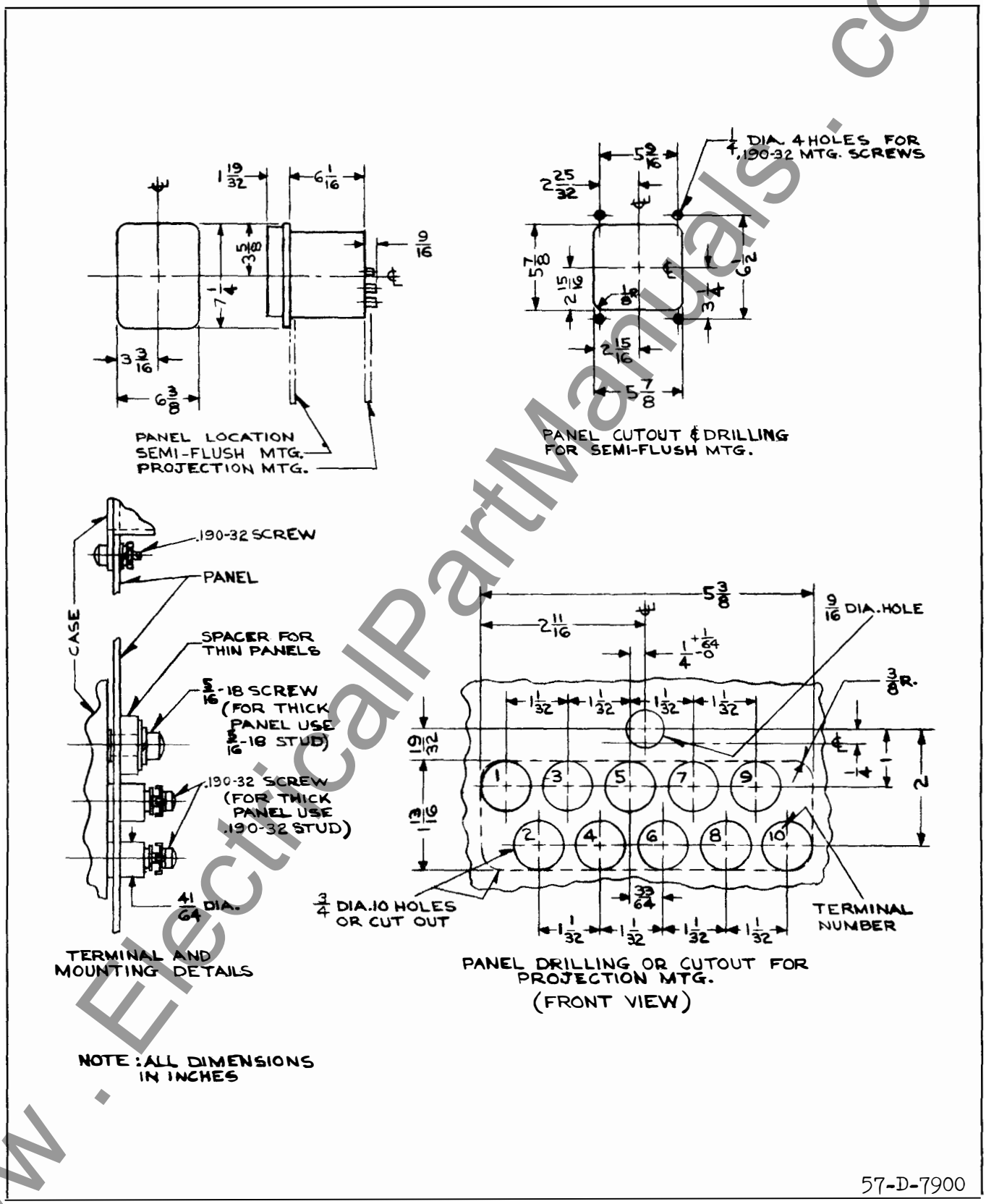


Fig. 3. Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

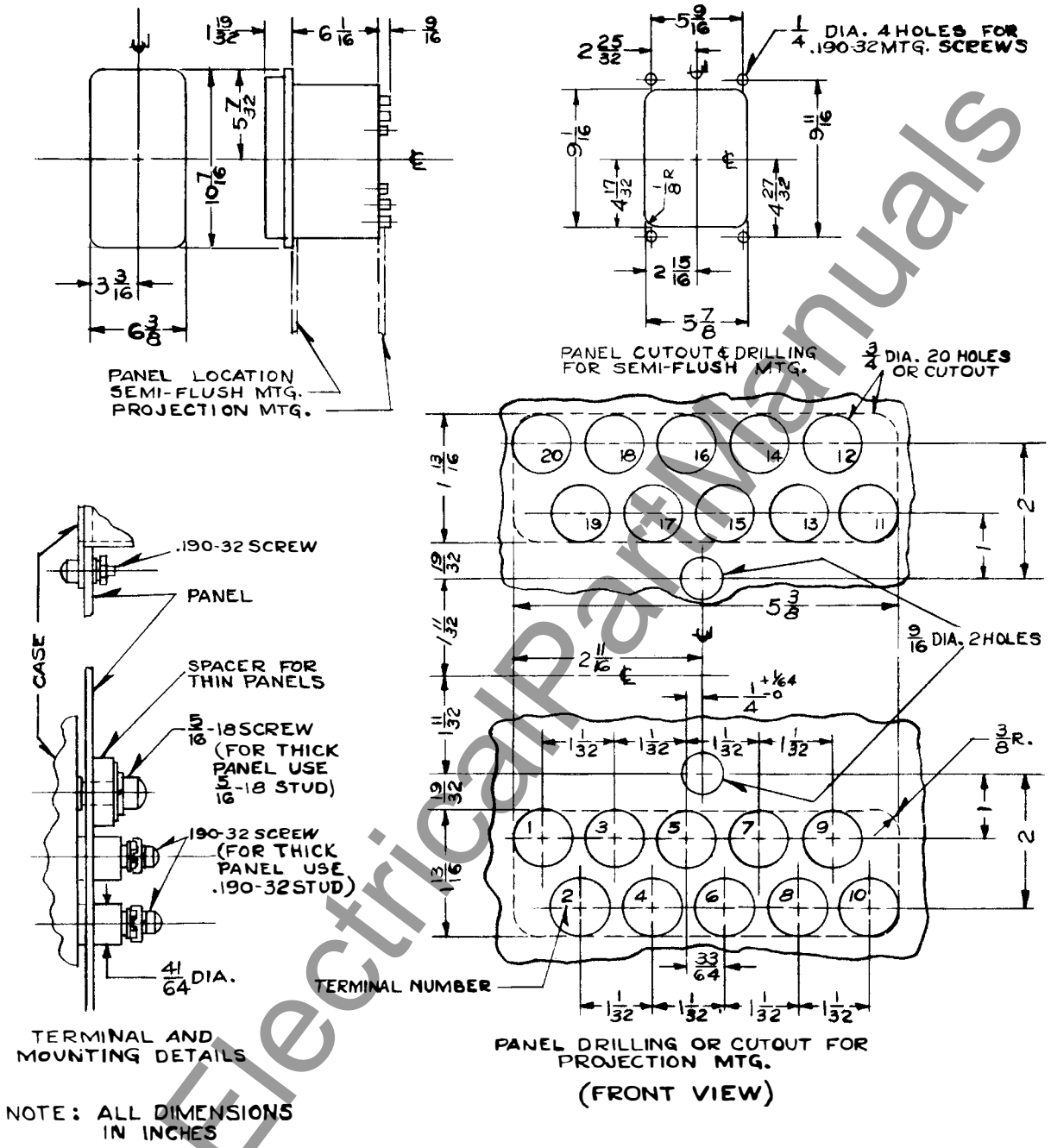


Fig. 4. Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.

INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY IN FT-11 AND FT-22 CASES

APPLICATION

The relay can be supplied for use on the following voltages without an external resistor by the use of suitable coils. The standard coils are:

6, 12, 24, 48, 125 and 250 Volts d-c
115 and 230 Volts - 25 Cycles
115, 230, 440 and 575 Volts - 50 or 60 Cycles

and for higher d-c or 25-cycle voltages with an external resistor. For further information regarding application refer to DB 41-750 or the nearest Westinghouse Sales Office.

The relay is intended for use as an auxiliary relay for miscellaneous automatic and remote control switching. It is suitable for many industrial applications also.

CONSTRUCTION

The SG is a clapper type relay consisting of four main parts: core, yoke, armature, and coil. Relays for AC applications contain a bronze washer between the yoke and core. A brass screw holds the yoke and core together. This washer prevents the armature from being held closed by residual magnetism in the core. If the relay has been dismantled, be sure that the washer is not omitted on reassembly.

INSTALLATION

The relays should be mounted on switchboard panels or their equivalent in a location free from dirt, moisture, excessive vibration, and heat. Mount the relay vertically by means of the four mounting holes on the flange for semi-flush mounting or by means of the rear mounting stud or studs for projection mounting. Either a mounting stud or the mounting screws may be utilized for grounding the relay. The electrical connections may be made directly to the terminals by means of screws for steel panel mounting or to the terminal studs furnished with the relay for thick panel mounting. The terminal studs may be easily removed or inserted by locking two nuts on the stud and then turning the proper nuts with a wrench.

For detailed FT case information refer to I.L. 41-076.

The assembly of the moving contact fingers on the armature block is arranged to provide spring follow on both the make and break contacts. The stationary contact bracket may be bent slightly, if necessary, to change the back contact follow or alignment. See Table I for proper contact adjustment.

CHARACTERISTICS

All relays will pick up on 80% of the nameplate voltage rating or less. No adjustments are provided for varying the pick-up. The armature will open at 30% or less on direct current and at 60% or less on alternating current.

The volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The watt consumption at rated d-c voltage is 3.5.

Each contact will carry 12 amperes continuous and 30 amperes for one minute.

The contact interrupting ratings are as follows: All values are non-inductive currents.

External connections may be made with the contacts in series if desired.

Interrupting Rating in Amperes

Volts	D-C 1 Contact	D-C 2 Contacts In Series	A-C 1 Contact
24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
550	0.25	0.5	10

All possible contingencies which may arise during installation, operation, or maintenance, and all details and variations of this equipment do not purport to be covered by these instructions. If further information is desired by purchaser regarding his particular installation, operation or maintenance of his equipment, the local Westinghouse Electric Corporation representative should be contacted.

SUPERSEDES I.L. 41-751/1C

EFFECTIVE OCTOBER 1965

*Revised when from superseded issue

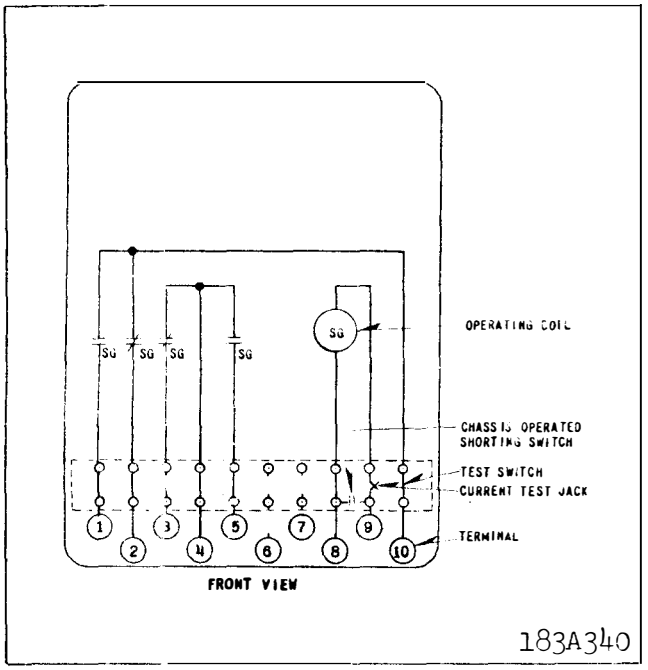


Fig. 1. Internal Schematic of the Single Unit SG Relay, with Current Operated Coil, in FT 11 Case. Shorting Switches and Current Test Jack Omitted from Terminals 8 and 9 for Voltage Operated Relays.

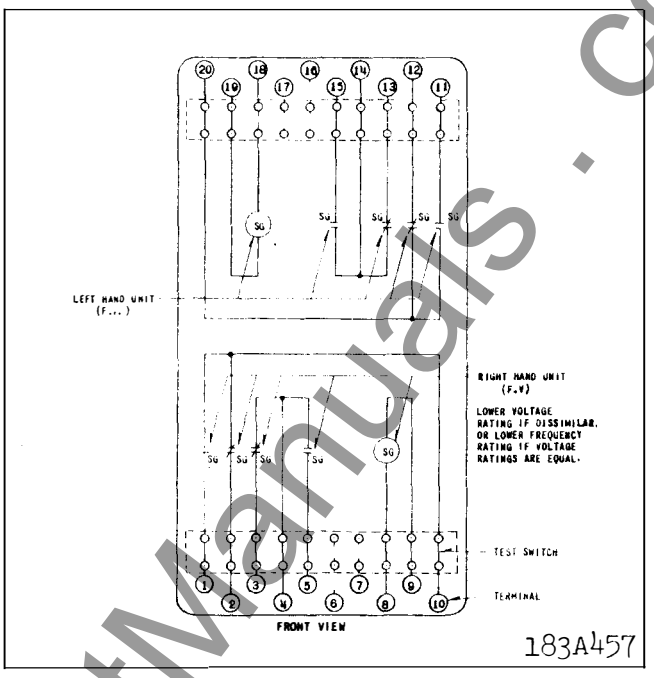


Fig. 2. Internal Schematic of the Double Unit SG Relay, Voltage Operated Coils, in FT 22 Case.

Operating Time

Pick-up: .033 — .05 sec. at d-c rating
.016 — .033 sec. at a-c rating

Drop-out. less than .016 sec. on d-c or a-c

RENEWAL PARTS

Major repairs can be most satisfactorily done at the factory or Westinghouse Service Shops. However, for customers equipped to do their own work, parts may be furnished on order. In ordering any part or requesting any other information, always give entire nameplate reading.

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make-Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
DPDT	1/8 - 9/64"	3/64"	3/64"	0.031"

(1) Measured at the contacts.

(2) Measured between the contact finger and the guide-bushing shoulder.

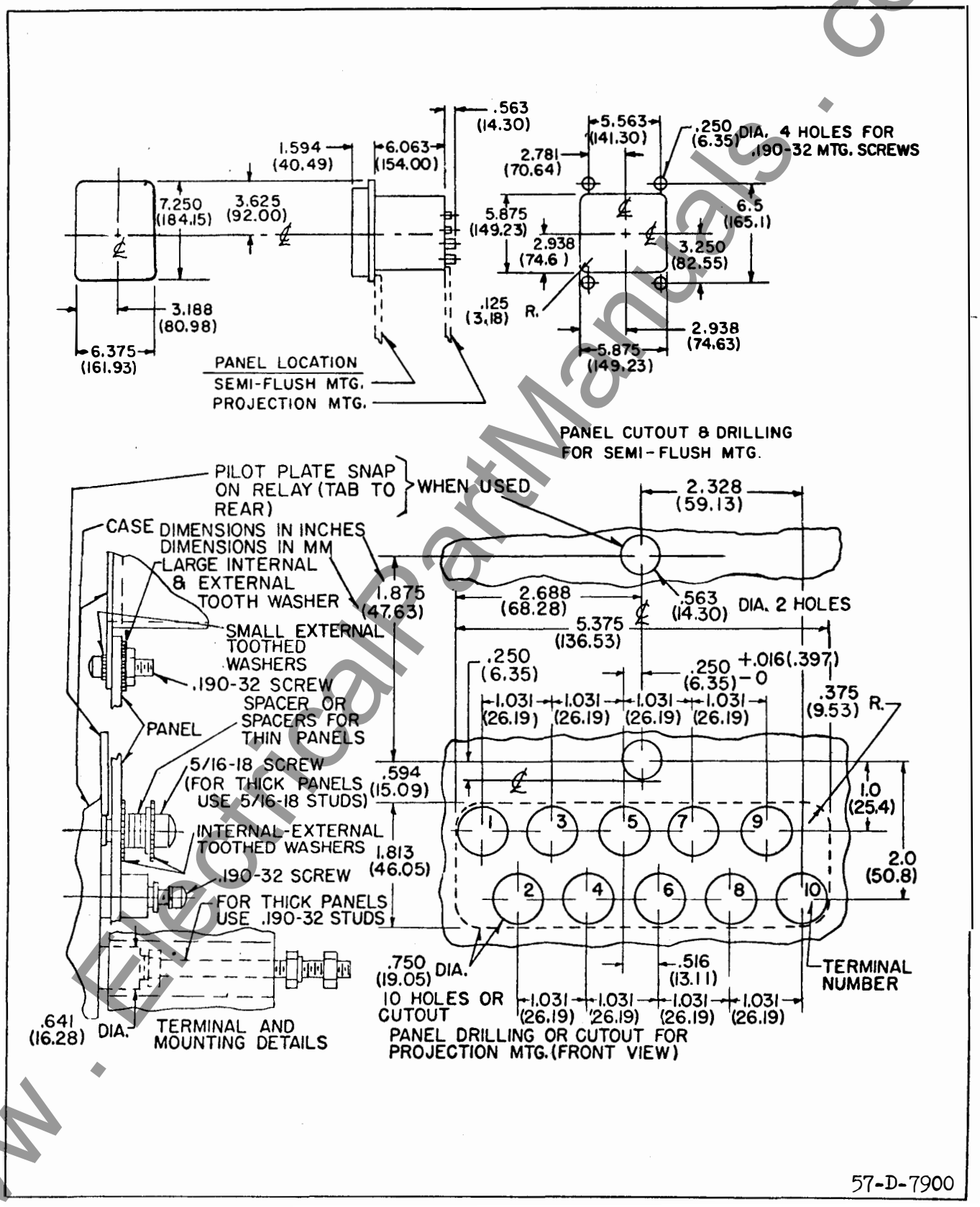


*Fig. 3 Outline and Drilling Plan for the Single Unit SG Relay in FT 11 Case.

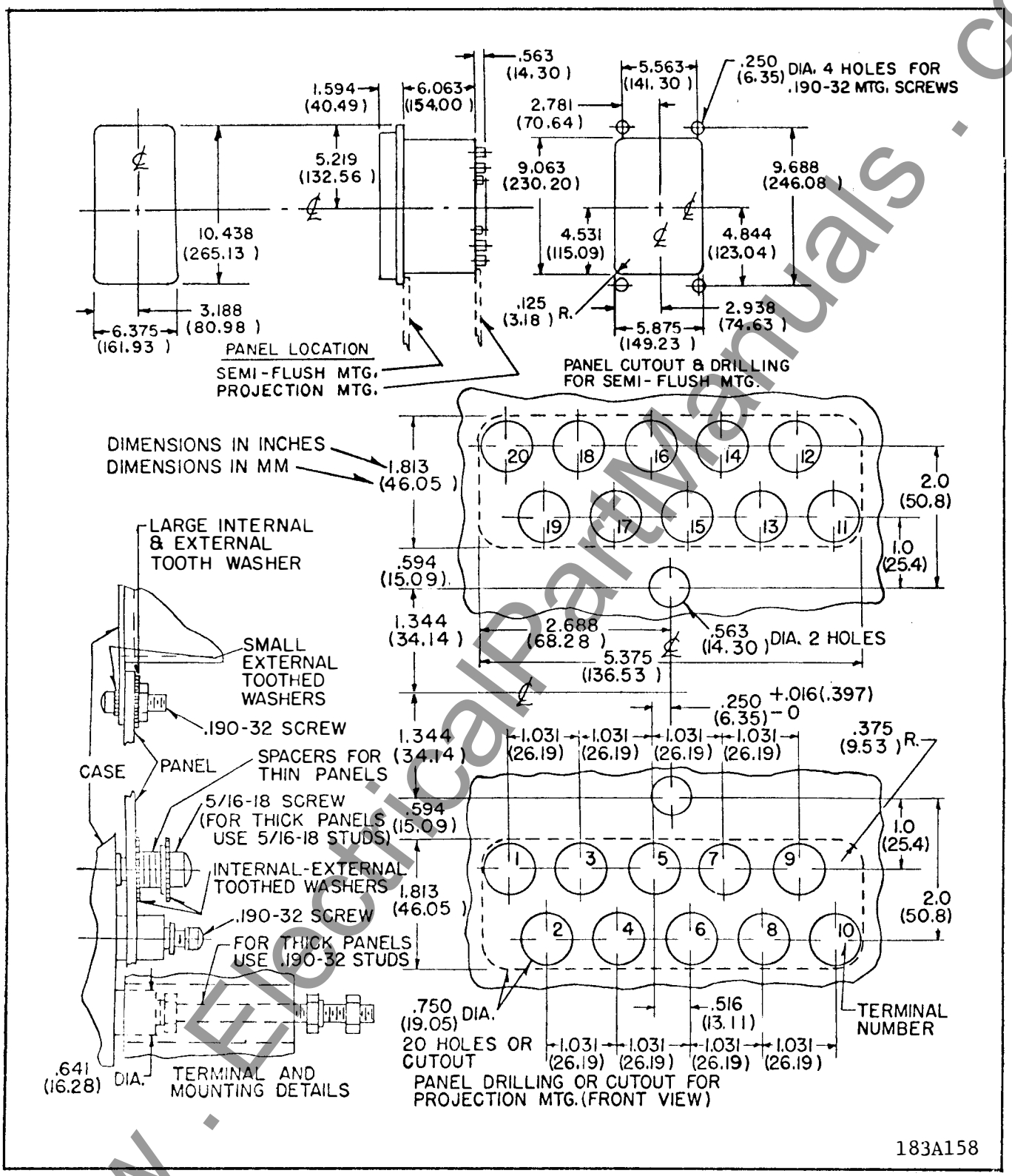


*Fig. 4 Outline and Drilling Plan for the Double Unit SG Relay in FT 22 Case.