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. For further information regarding application consult Westinghouse Relay Catalog Section #41-350 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 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

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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.

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 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 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 nameplate reading.

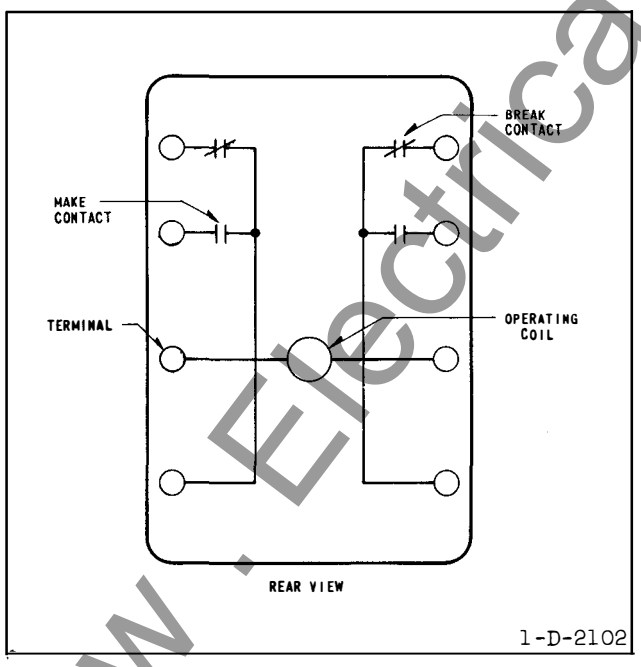

Fig. 1—Internal Connections for Closed Type SG Relay.

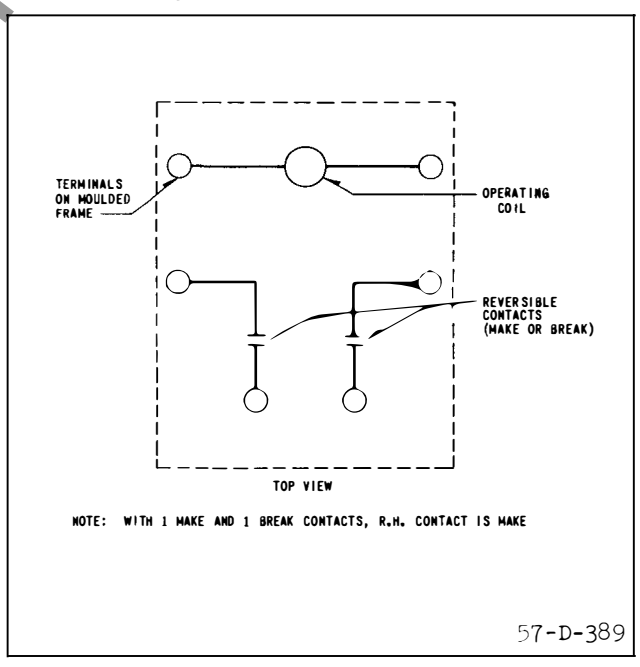

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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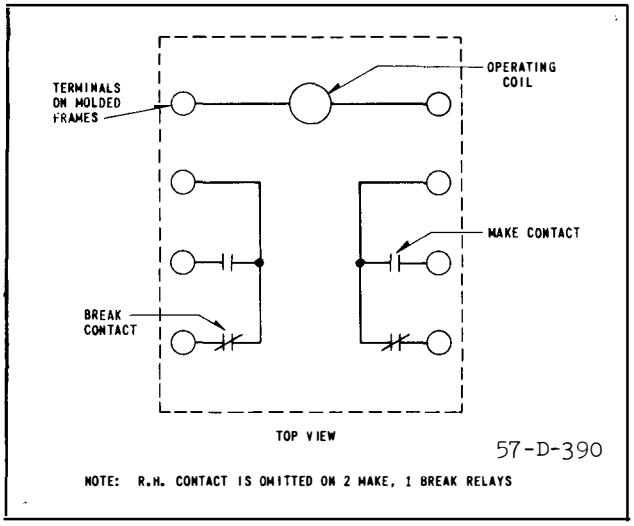

* Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

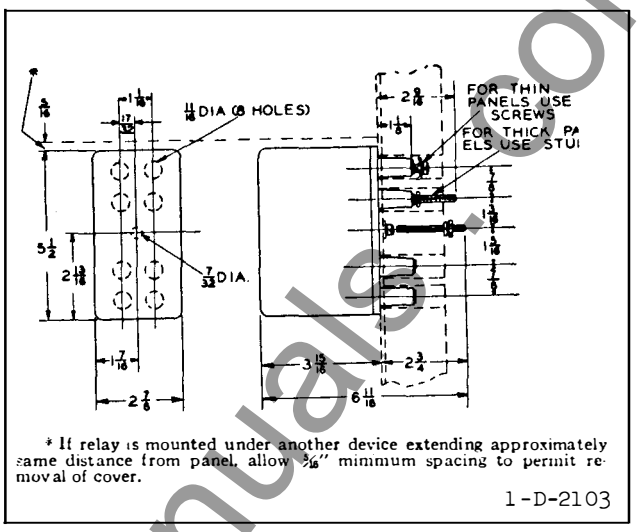

Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

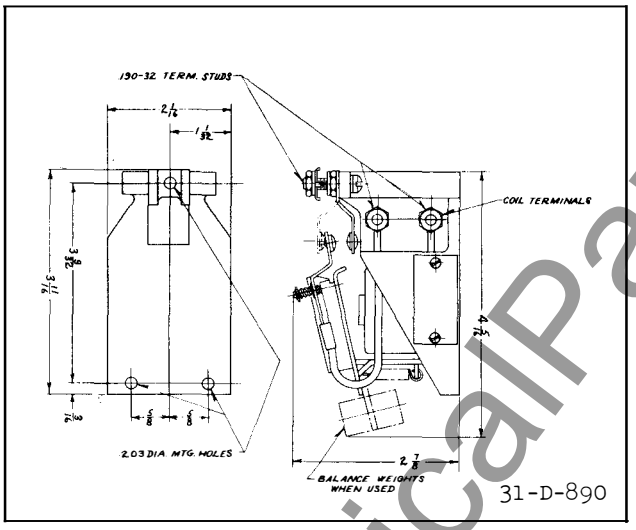

Fig. 5—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

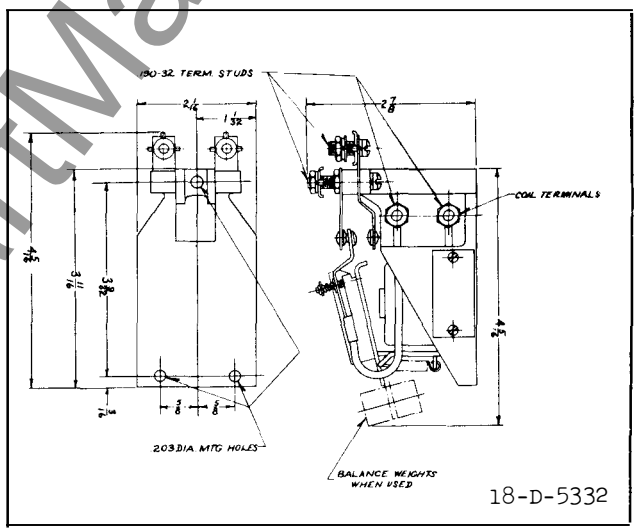

Fig. 6—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

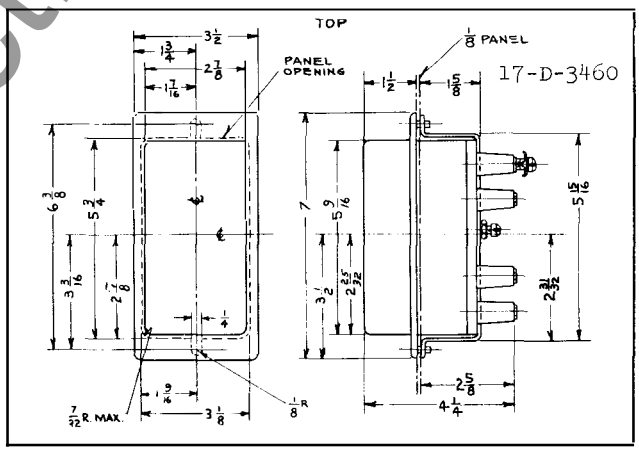

Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

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METER DIVISION • **NEWARK, N.J.**

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INSTRUCTIONS

TYPE SG AUXILIARY RELAY

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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. For further information regarding application consult Westinghouse Relay Catalog Section #41-350 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 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

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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.

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.

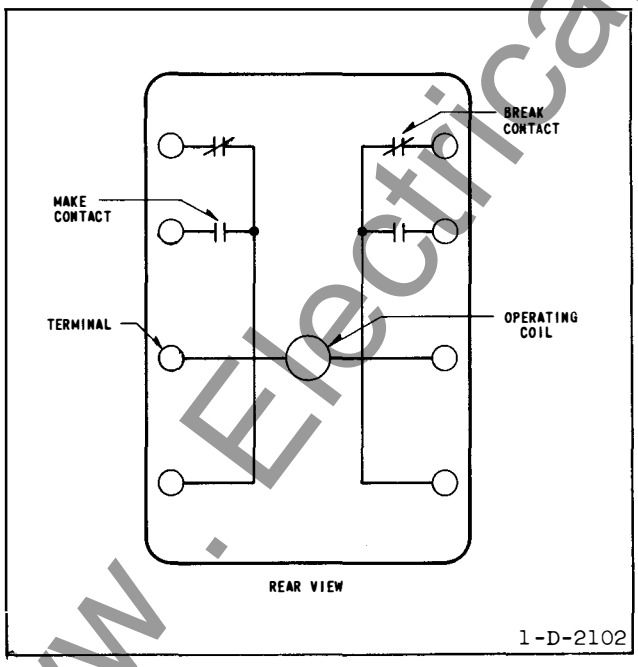

Fig. 1—Internal Connections for Closed Type SG Relay.

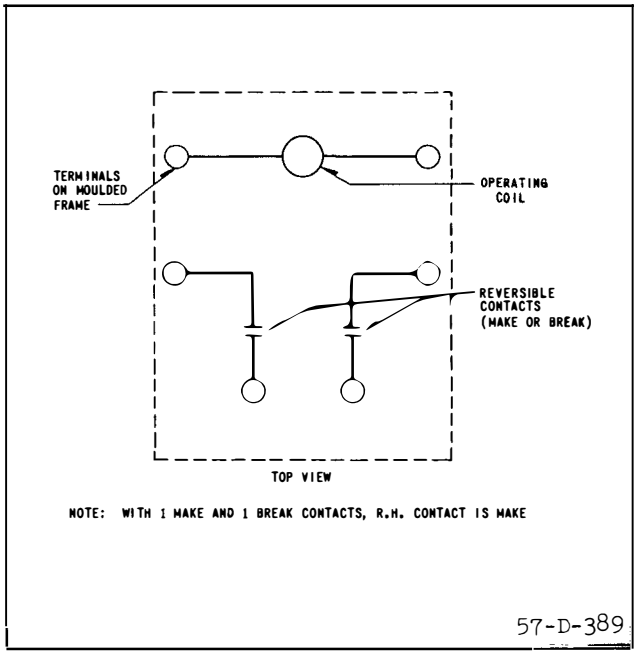

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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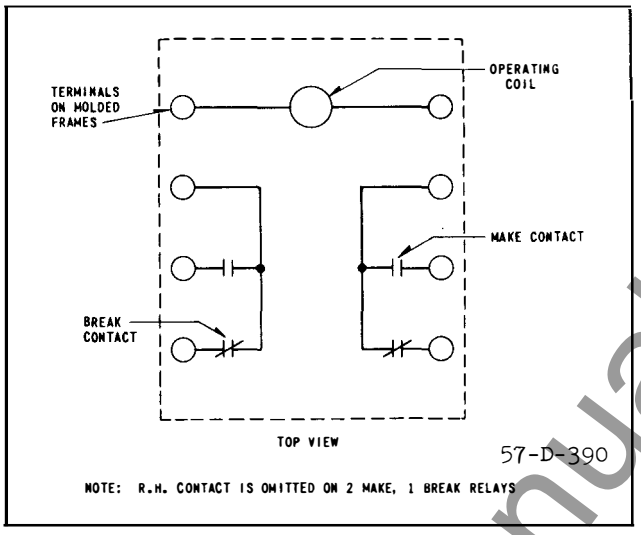


Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

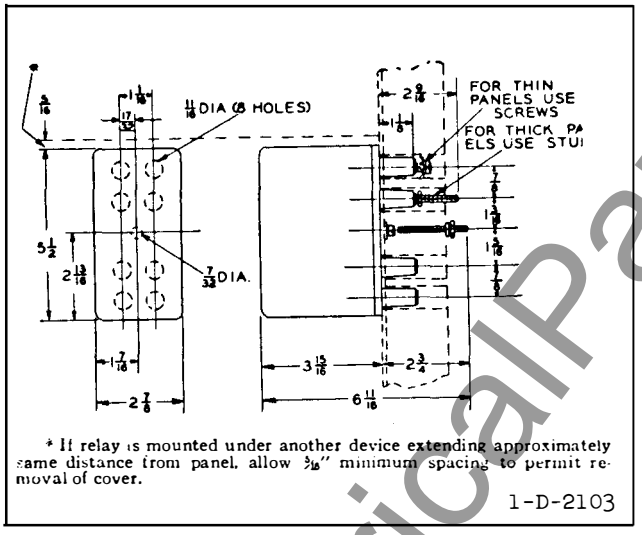
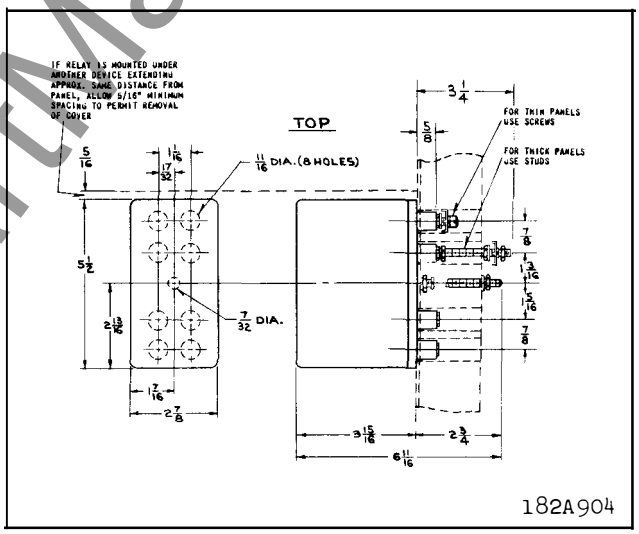


Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.



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

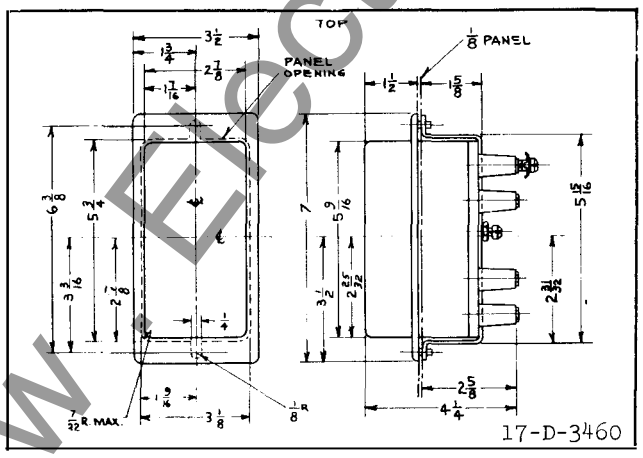
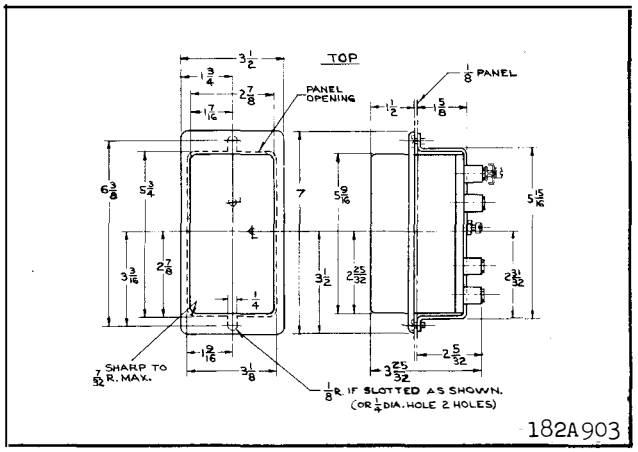


Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.



*** 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.**

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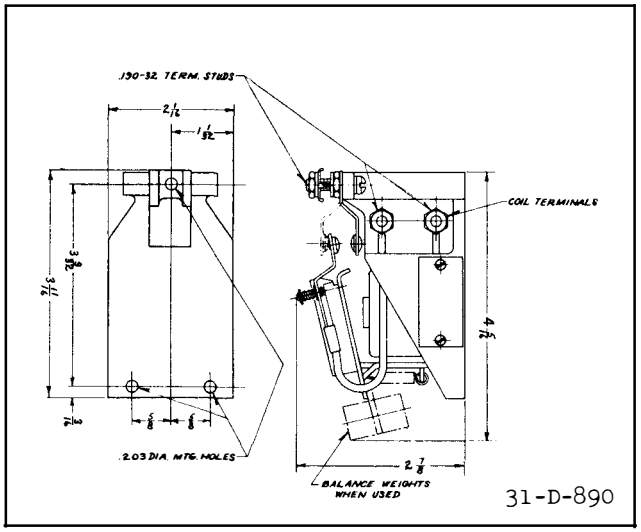

Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

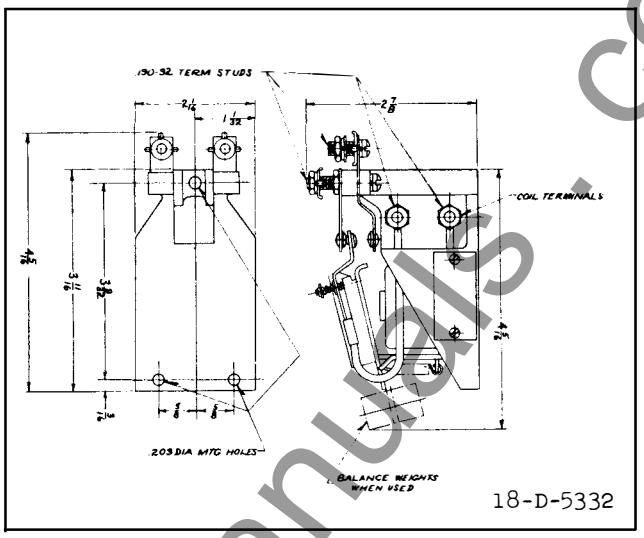

Fig. 9—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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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.

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

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.

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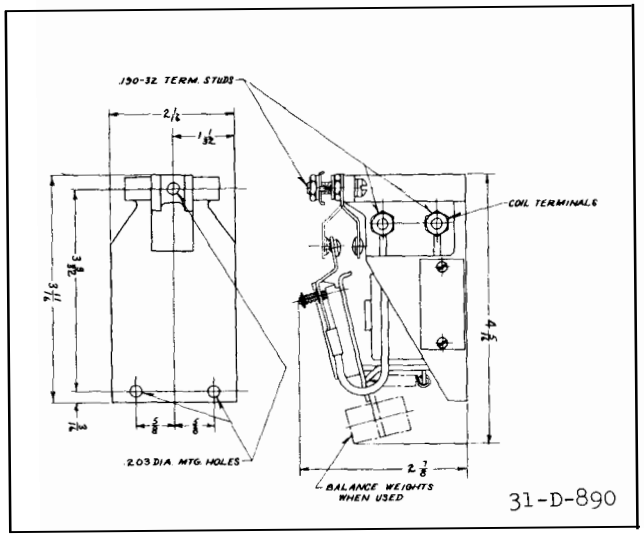

Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

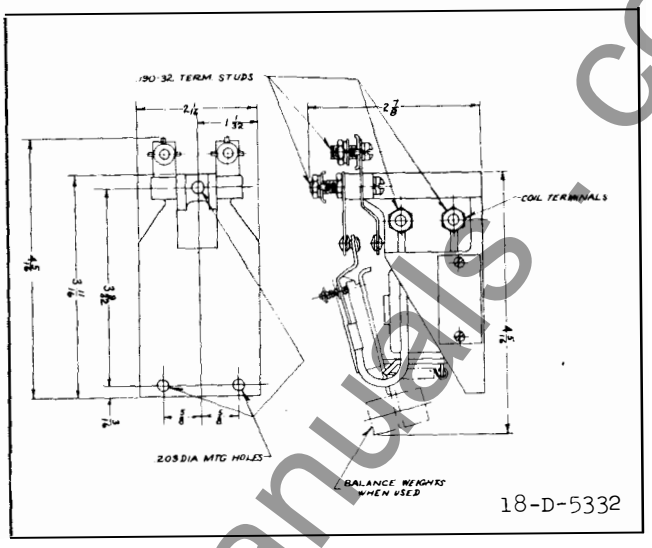

Fig. 9—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

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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.

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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, on 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.

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48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
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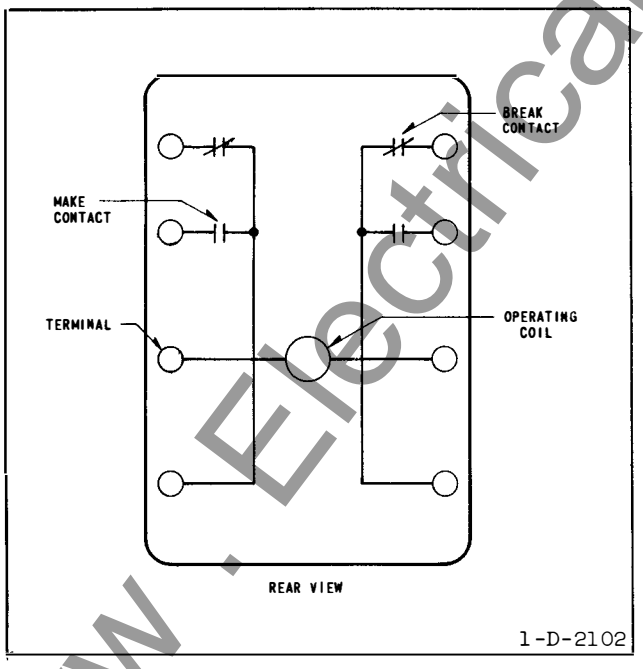

Fig. 1—Internal Connections for Closed Type SG Relay.

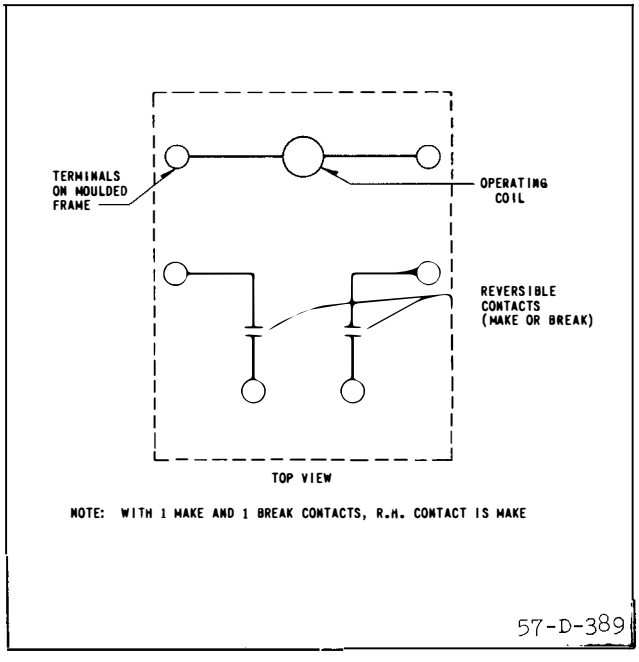

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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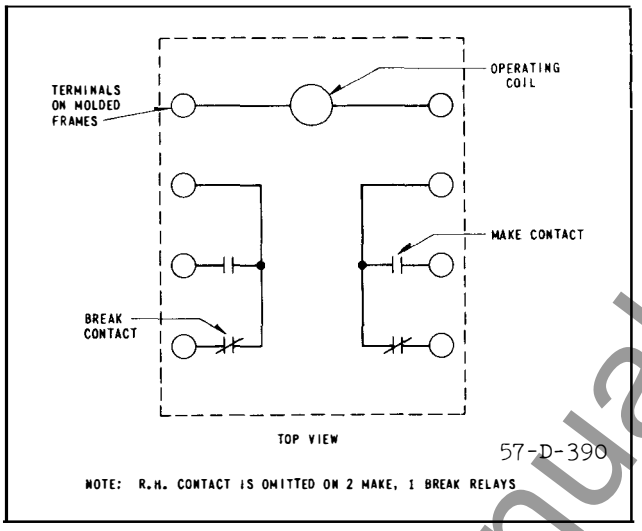


Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

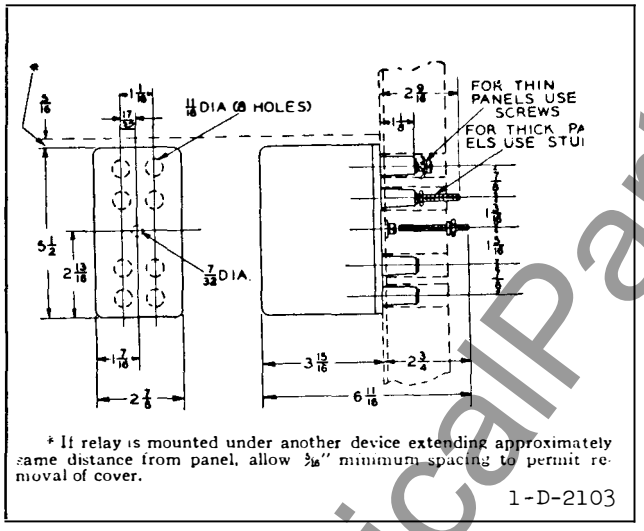
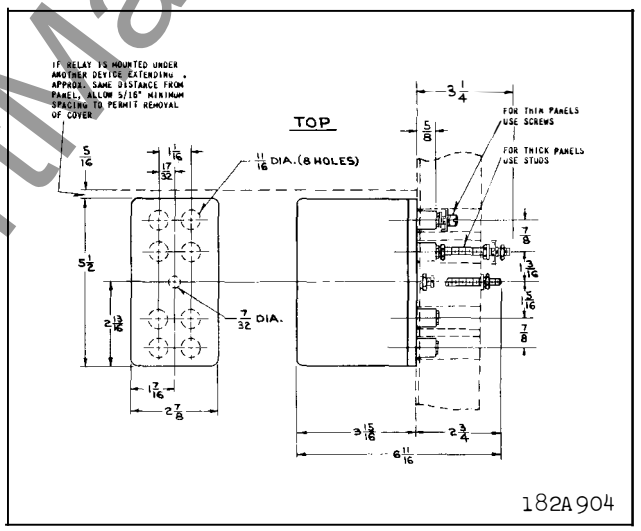


Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.



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

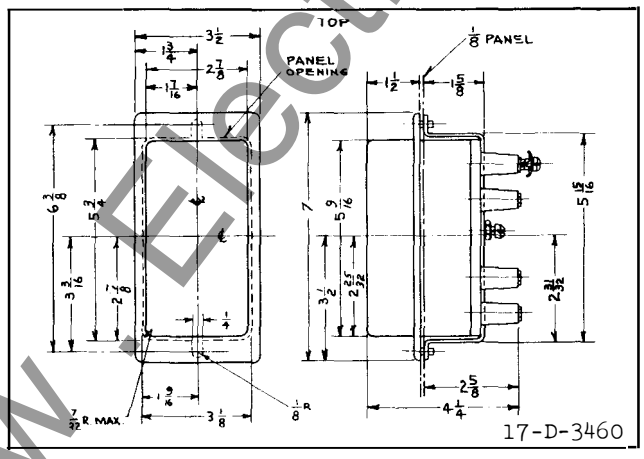
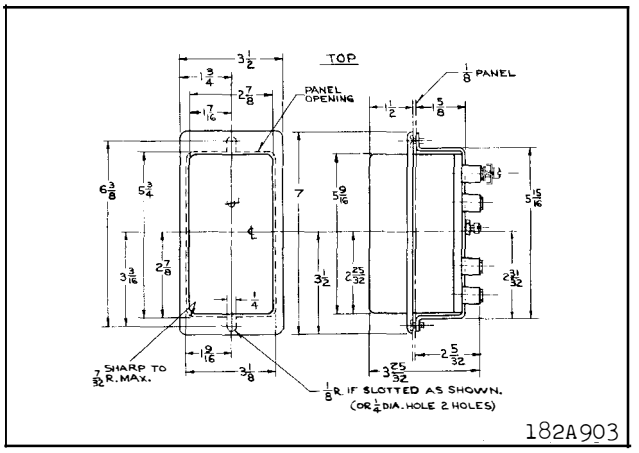


Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.



*** 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.**

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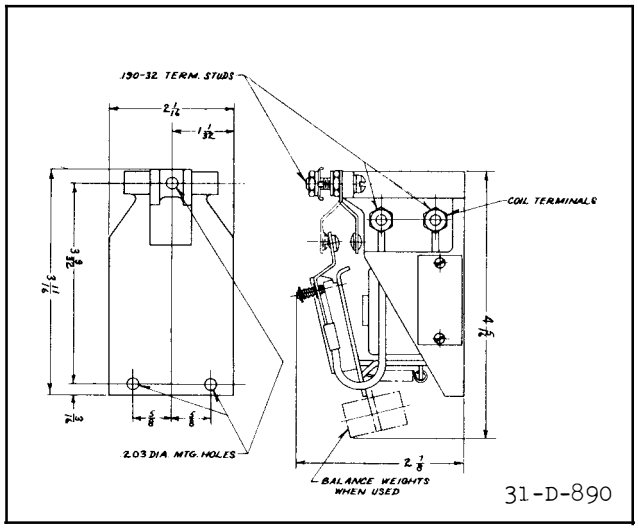

Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

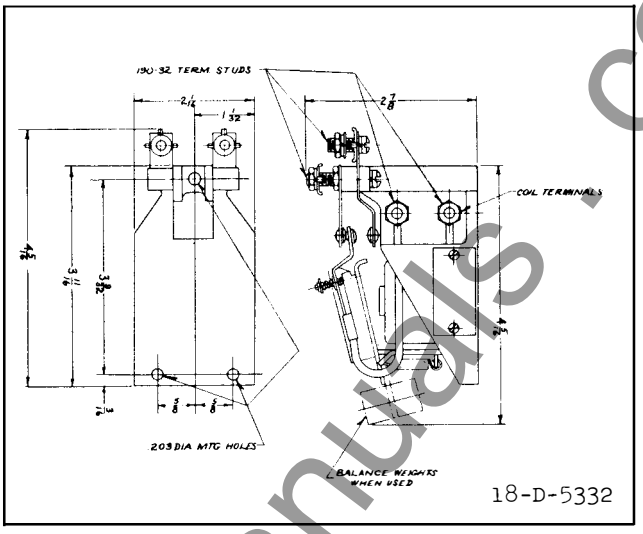

Fig. 9—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay.For Reference Only.

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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 aides.

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

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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, on 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.

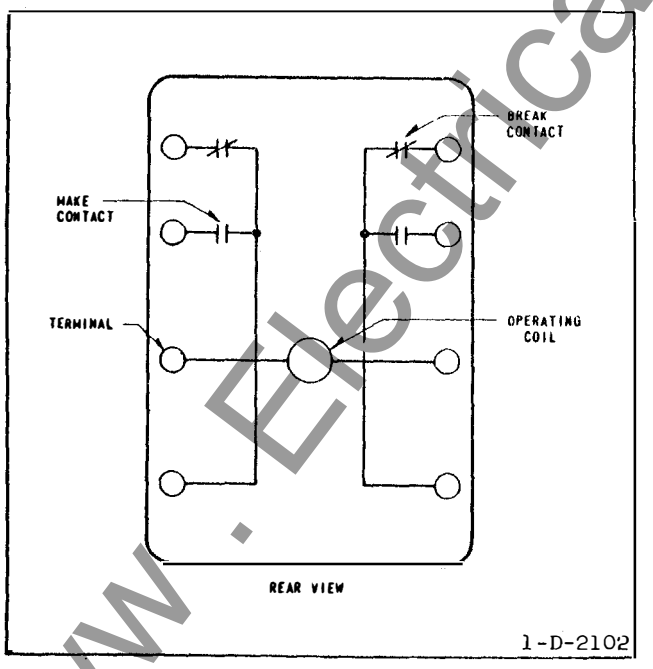

Fig. 1—Internal Connections for Closed Type SG Relay.

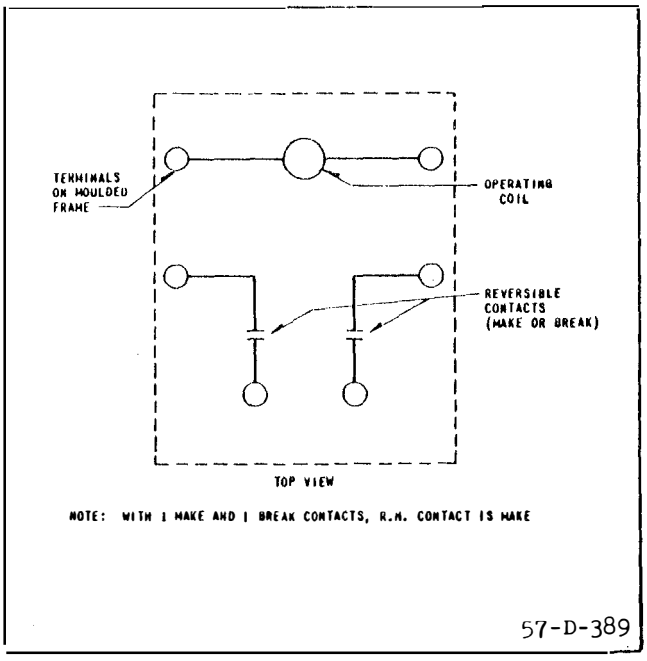

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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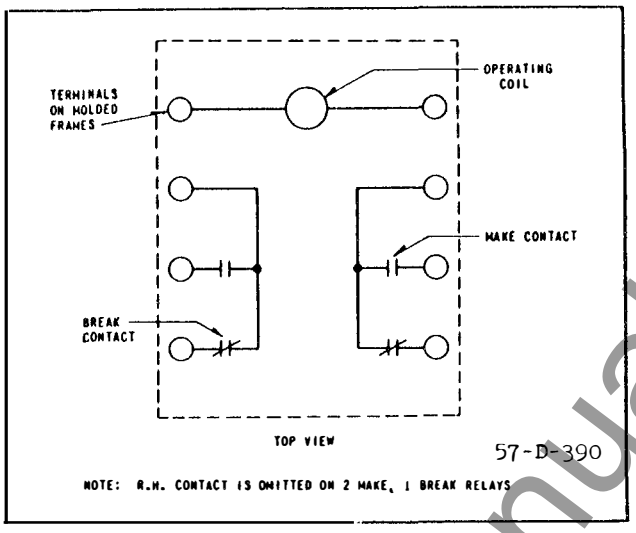

Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

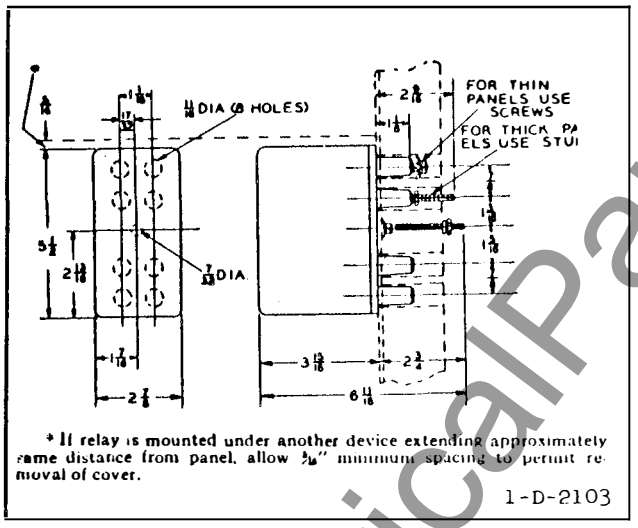

Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

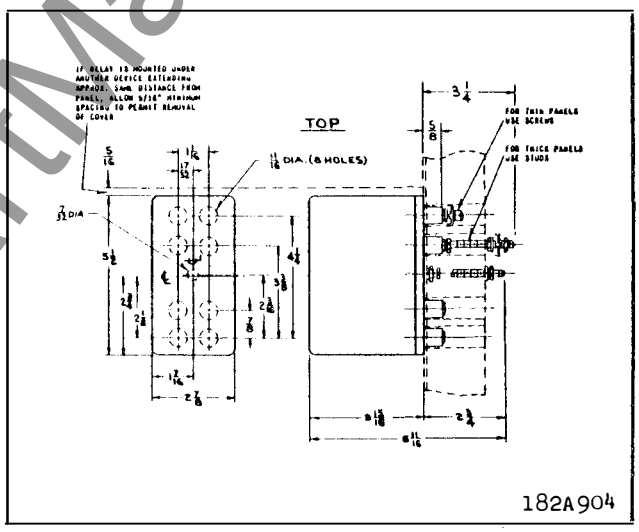

***Fig. 5—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.**

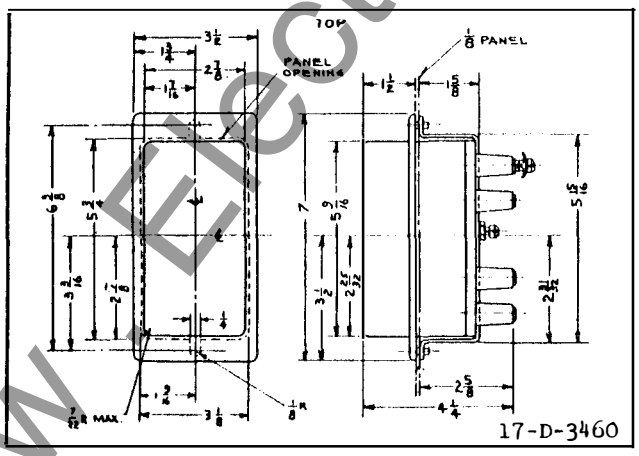

Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

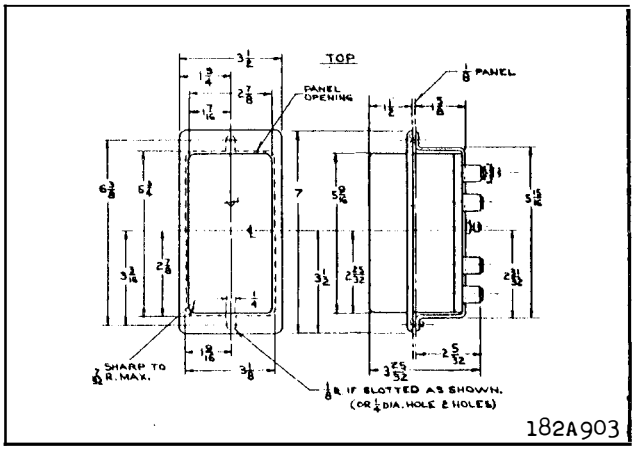

Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

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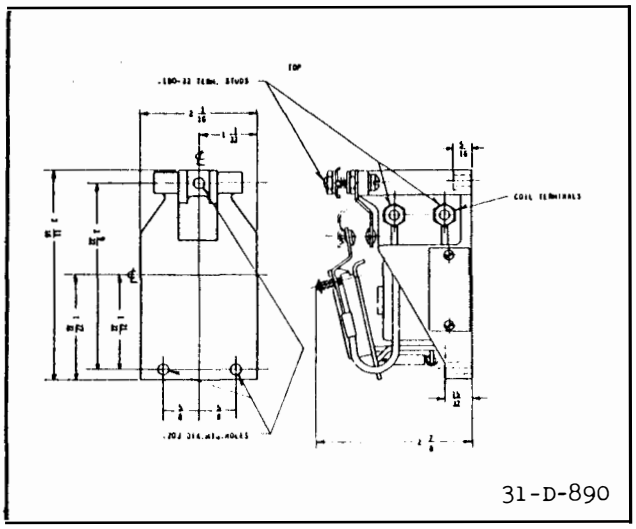
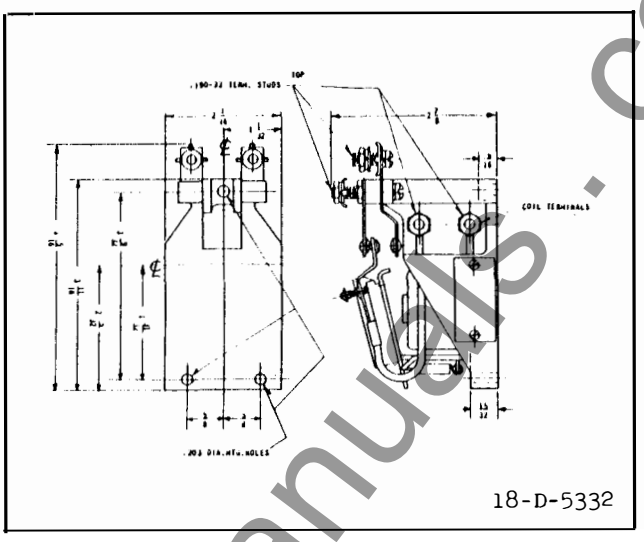


* Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



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

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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

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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, on 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.

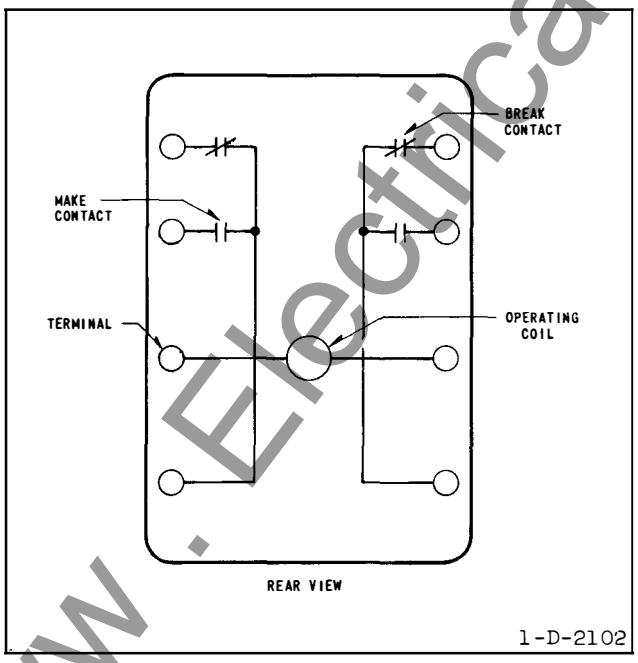

Fig. 1—Internal Connections for Closed Type SG Relay.

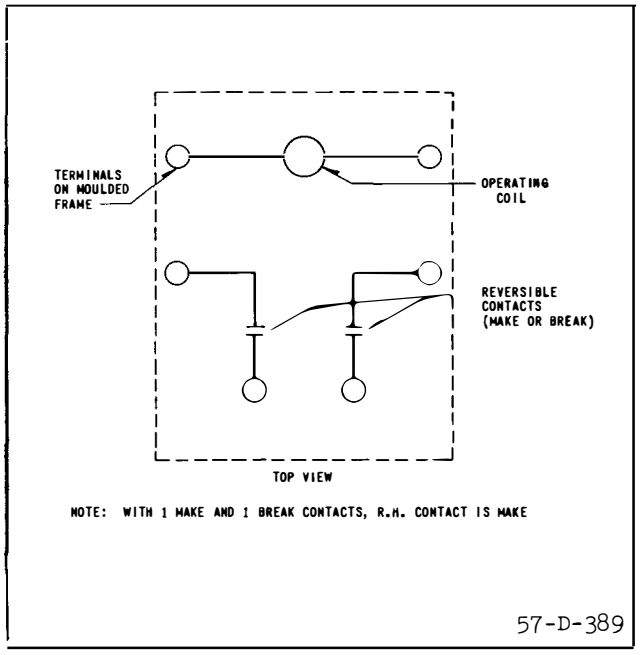

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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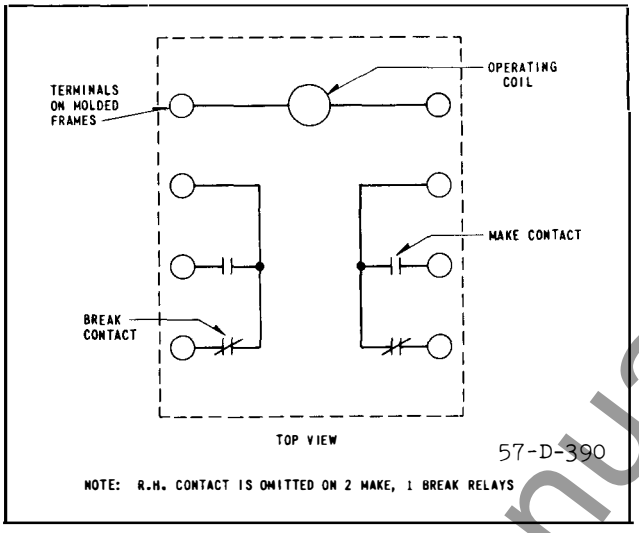

Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

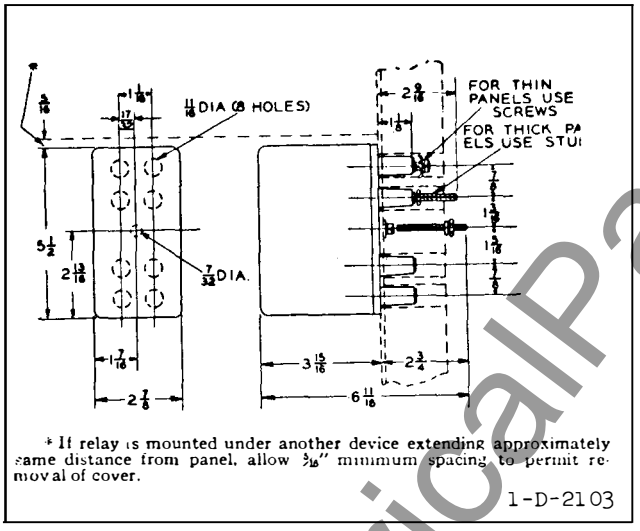

Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

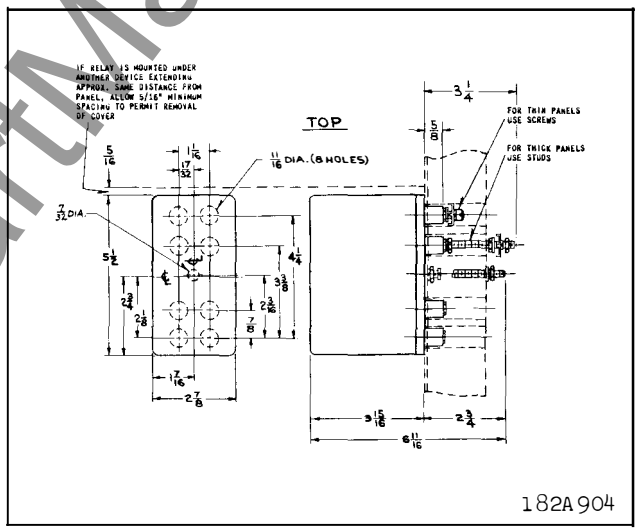

***Fig. 5—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.**

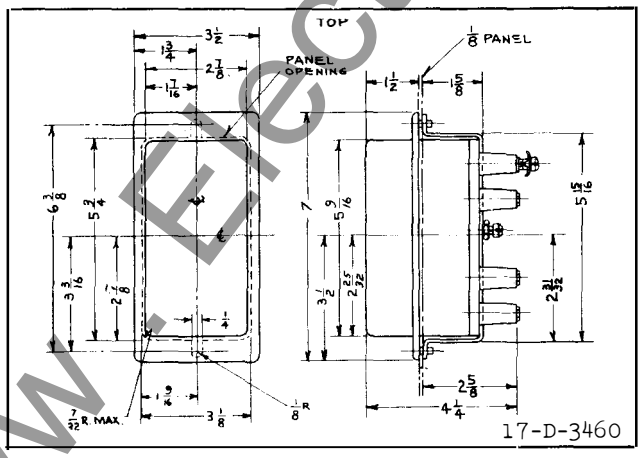

Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

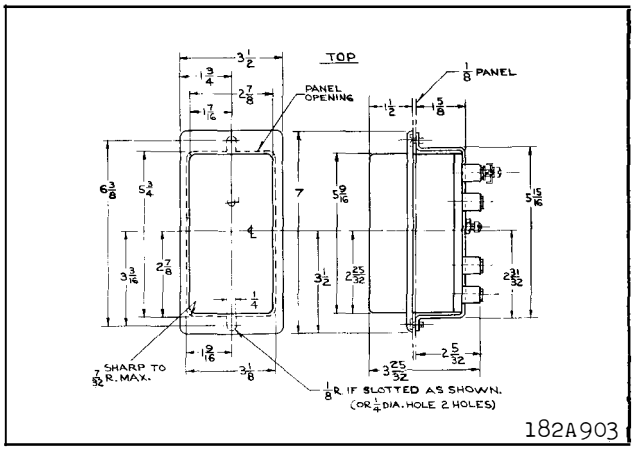

Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

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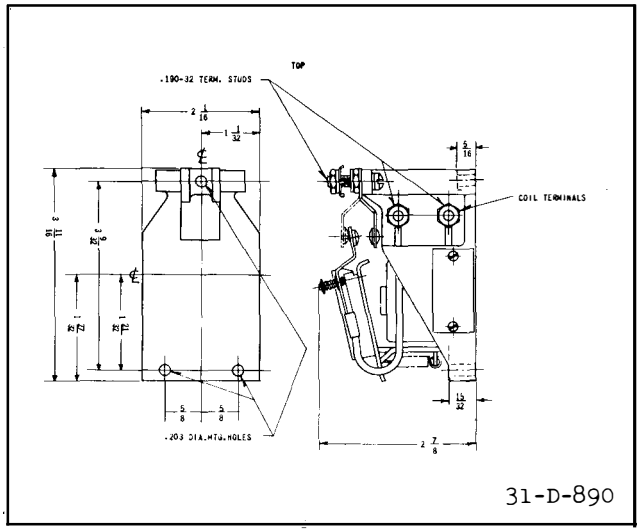
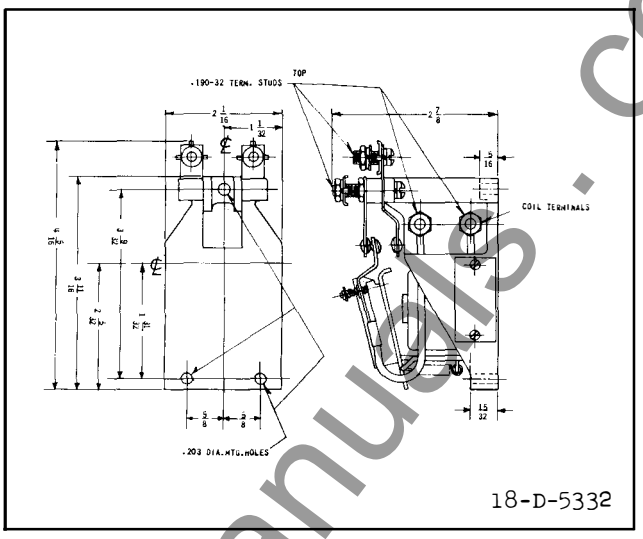


* Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



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

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

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.

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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

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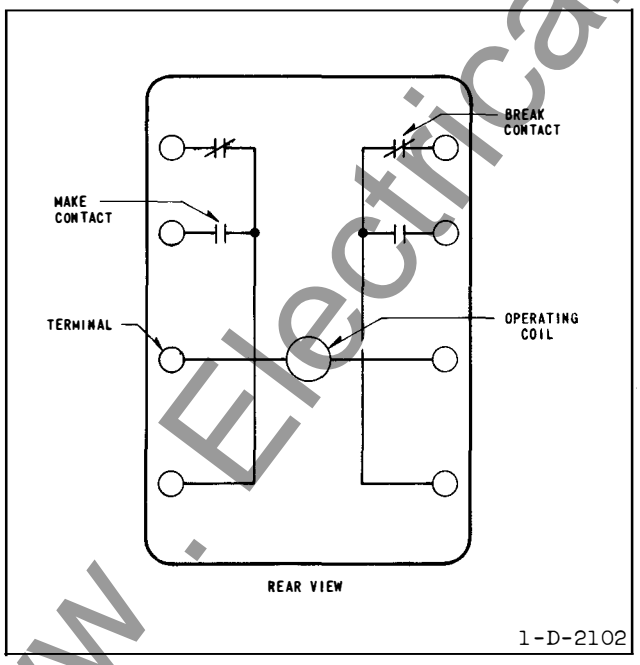

Fig. 1—Internal Connections for Closed Type SG Relay.

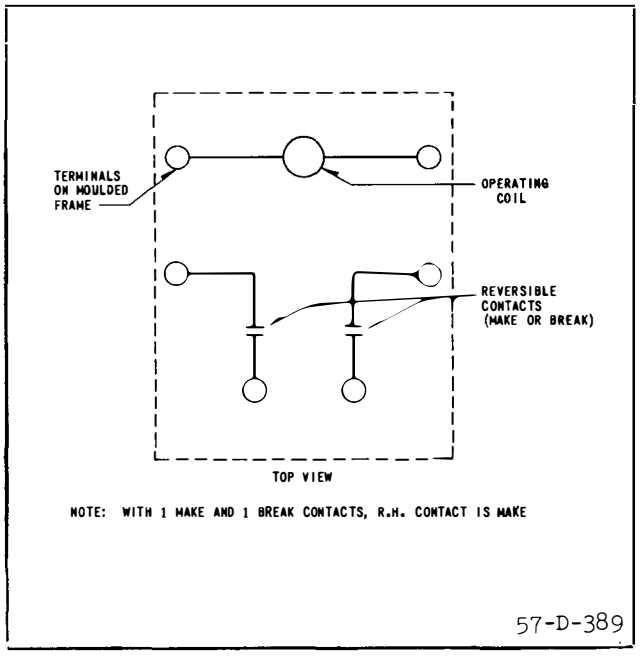

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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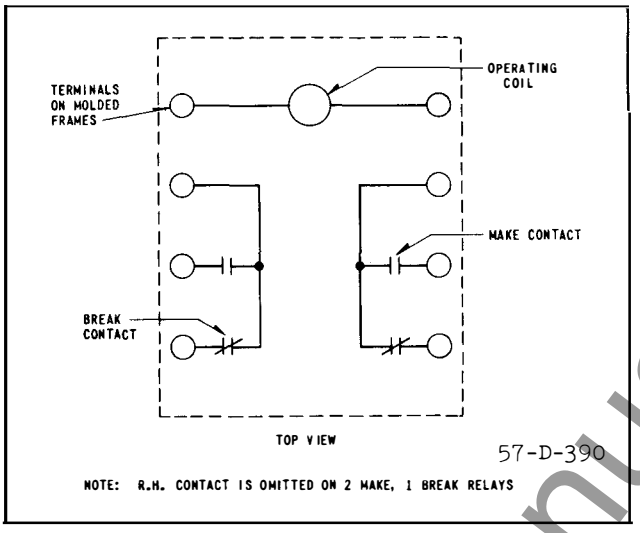

Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

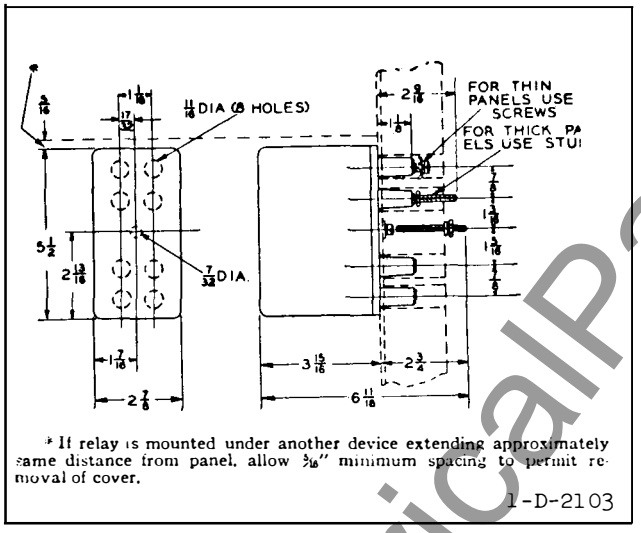

Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

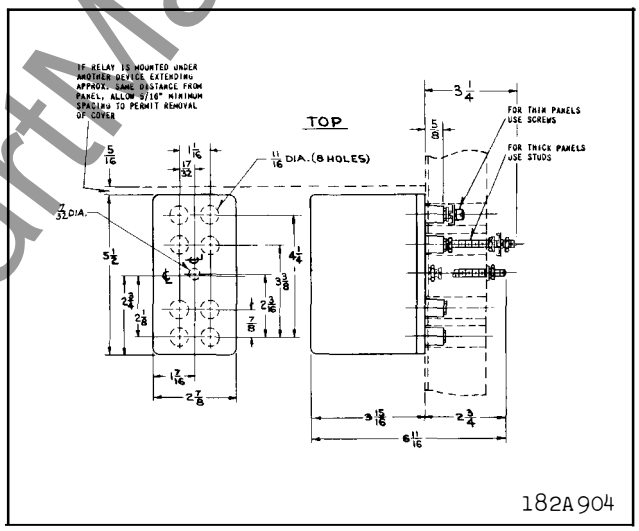

***Fig. 5—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.**

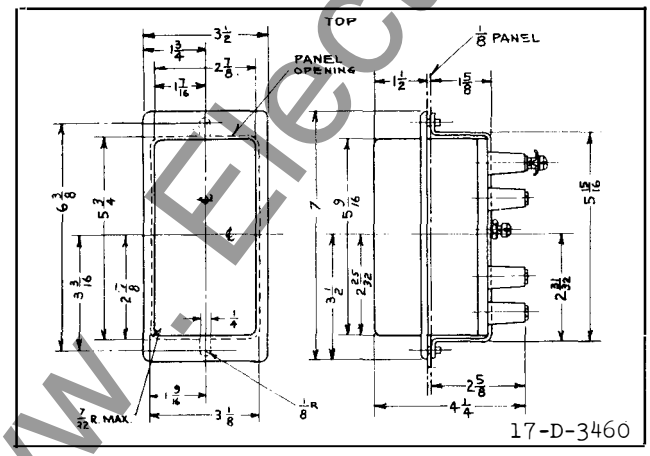

Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

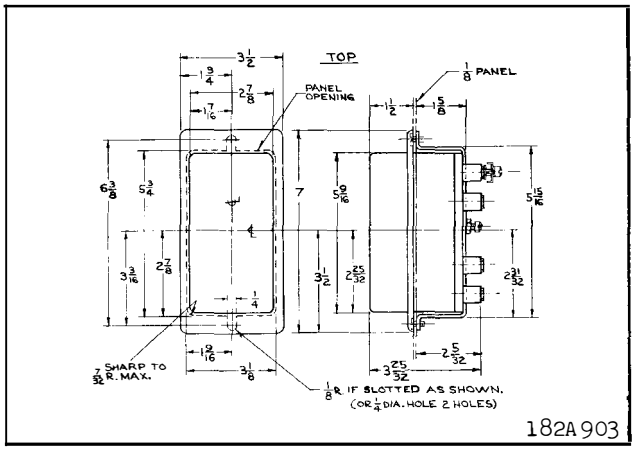

Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

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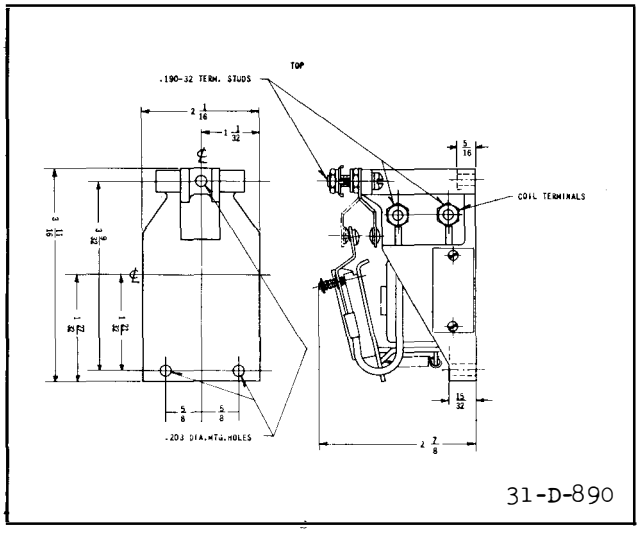
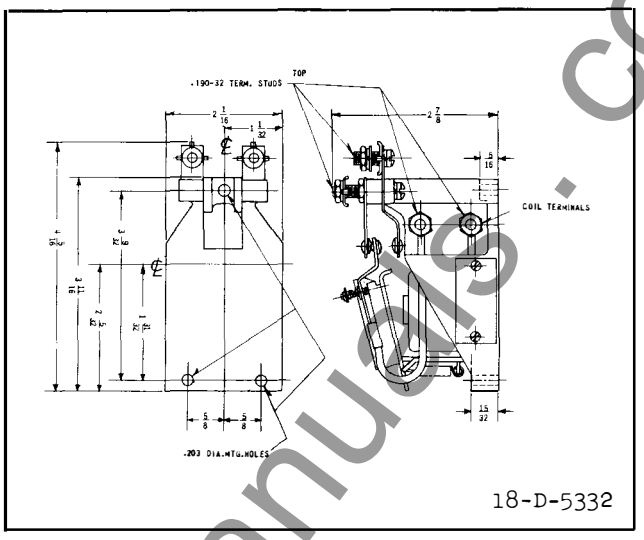


* Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



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

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RELAY DEPARTMENT
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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

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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.

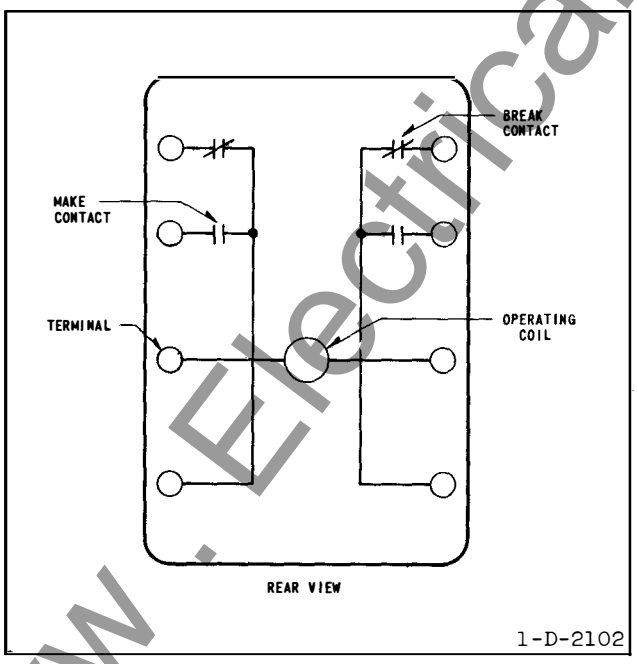

Fig. 1—Internal Connections for Closed Type SG Relay.

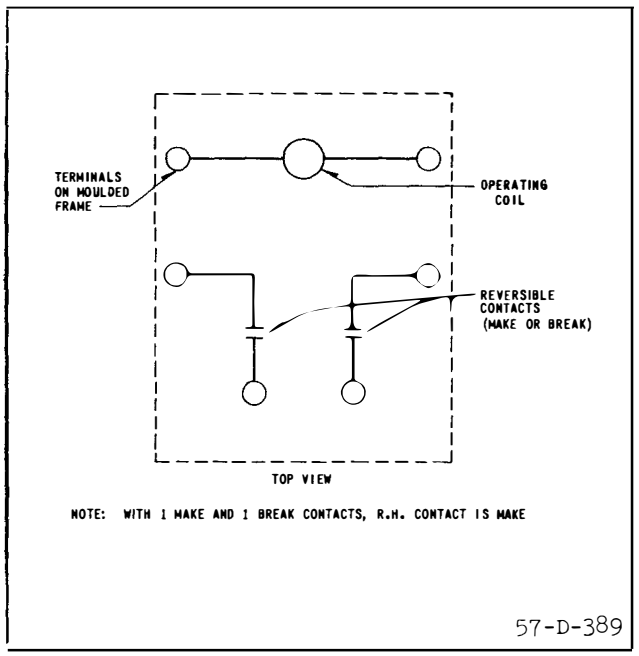

Fig. 2—Internal Connections for Open Type SG Relay with Reversible Contacts.

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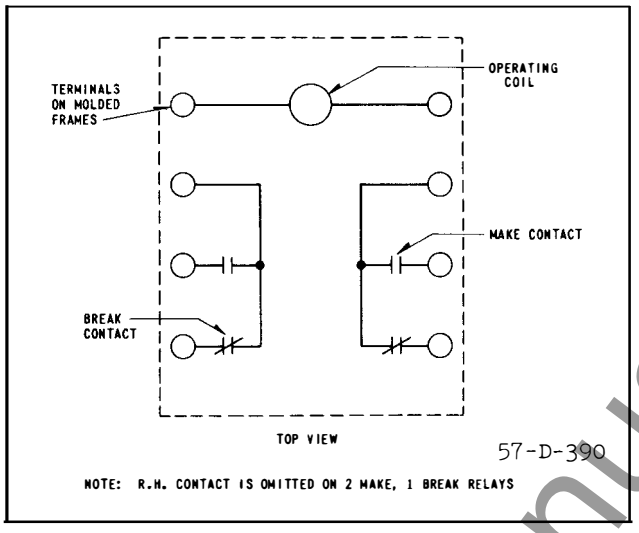

Fig. 3—Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

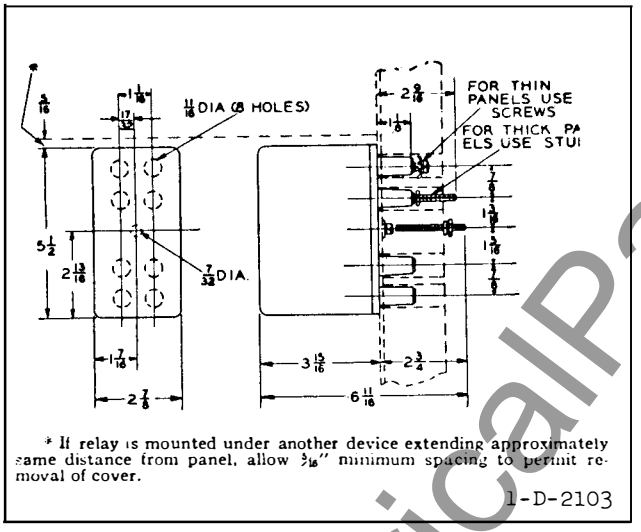

Fig. 4—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

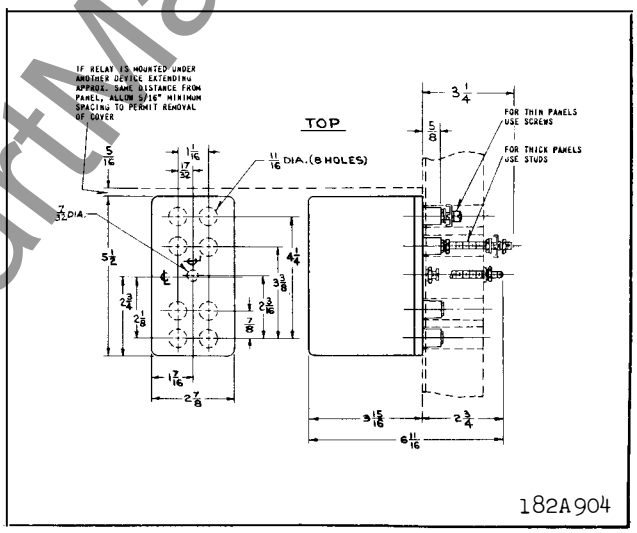

***Fig. 5—Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.**

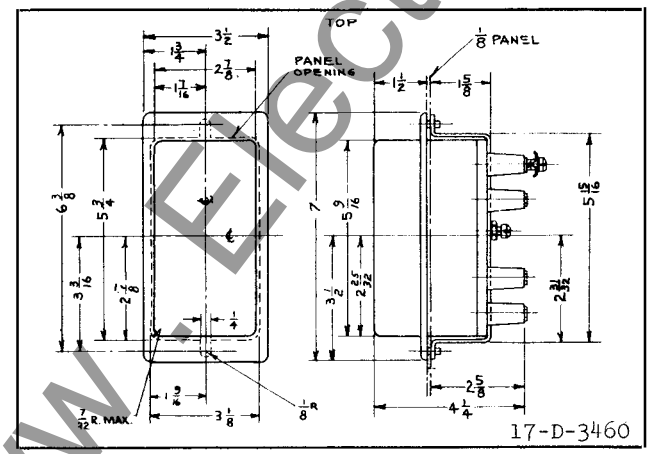

Fig. 6—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

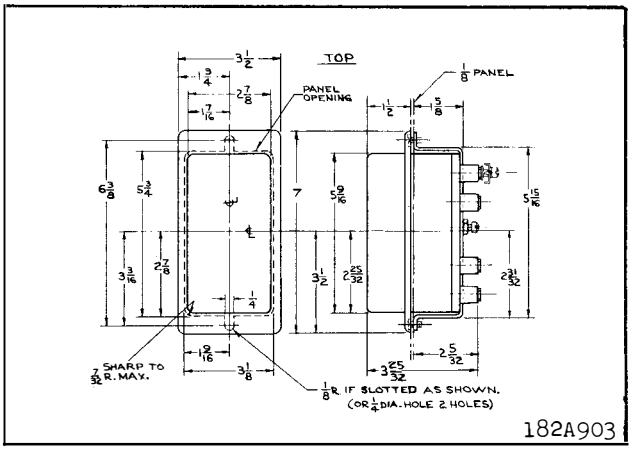

Fig. 7—Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

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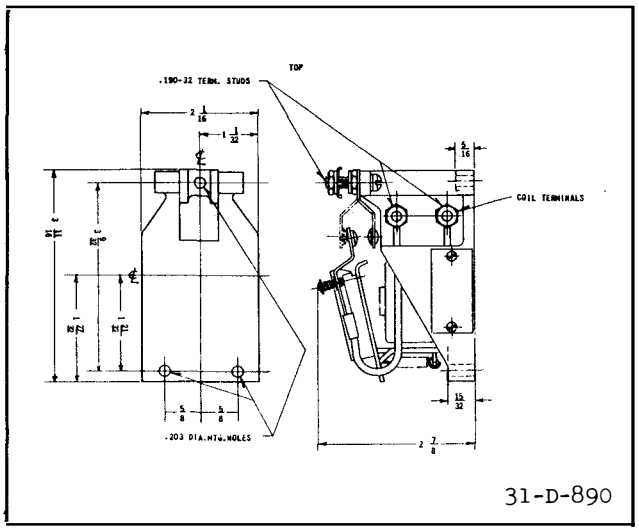
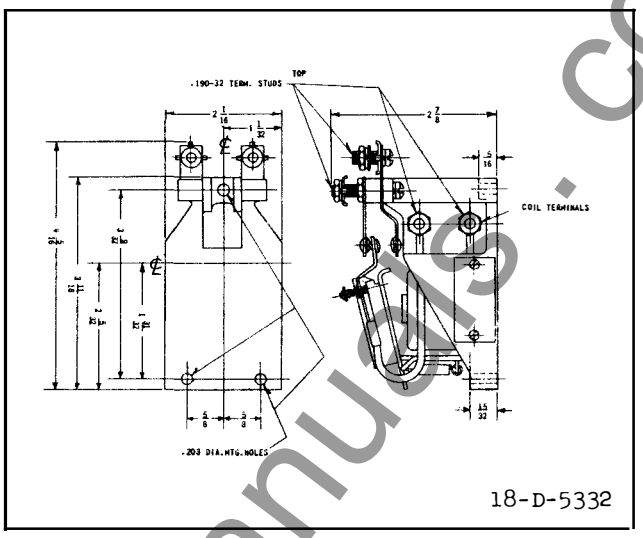


* Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



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

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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 575-50 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751C
*Denotes change from superseded Issue

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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 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

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 nameplate reading.

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make - Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
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.

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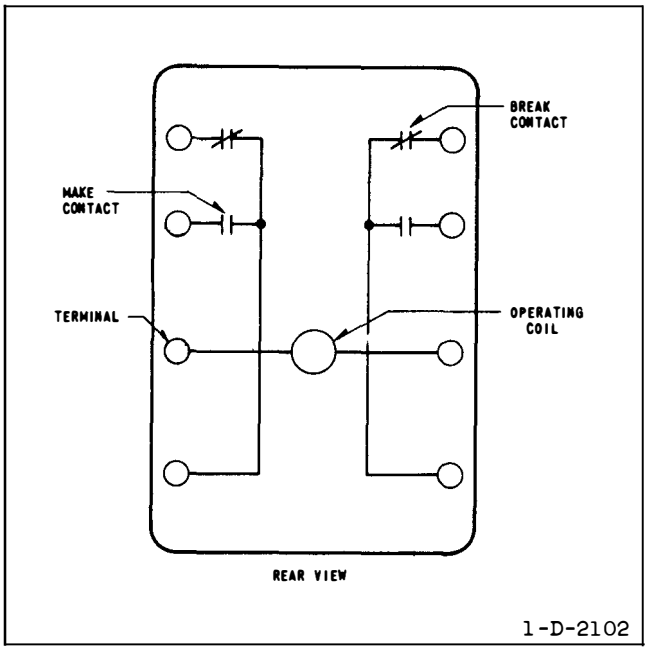


Fig. 1 Internal Connections for Closed Type SG Relay.

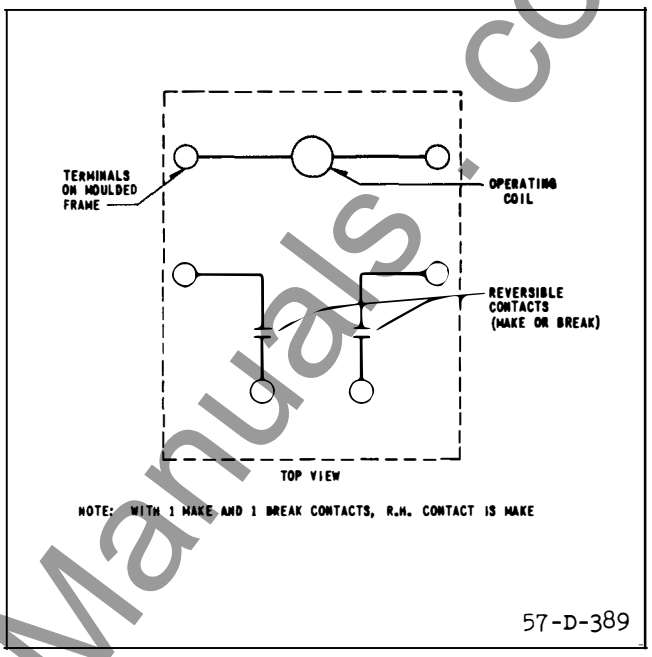


Fig. 2 Internal Connections for Open Type SG Relay with Reversible Contacts.

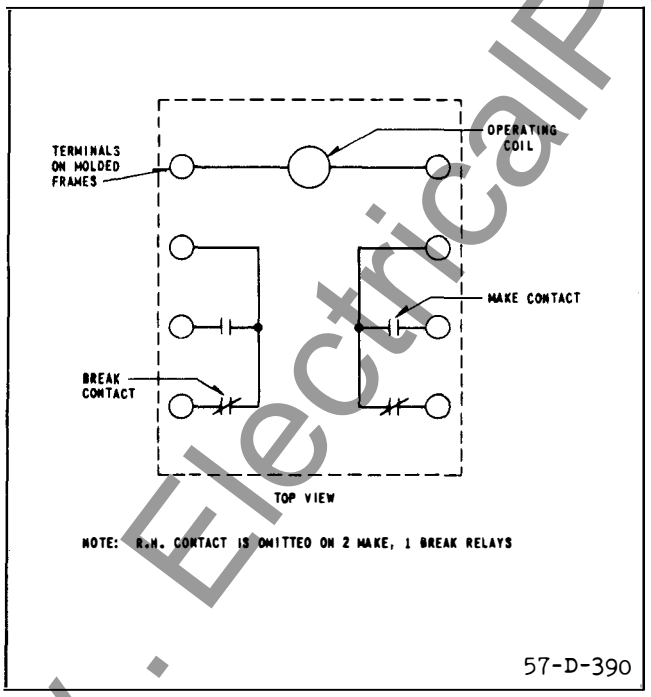
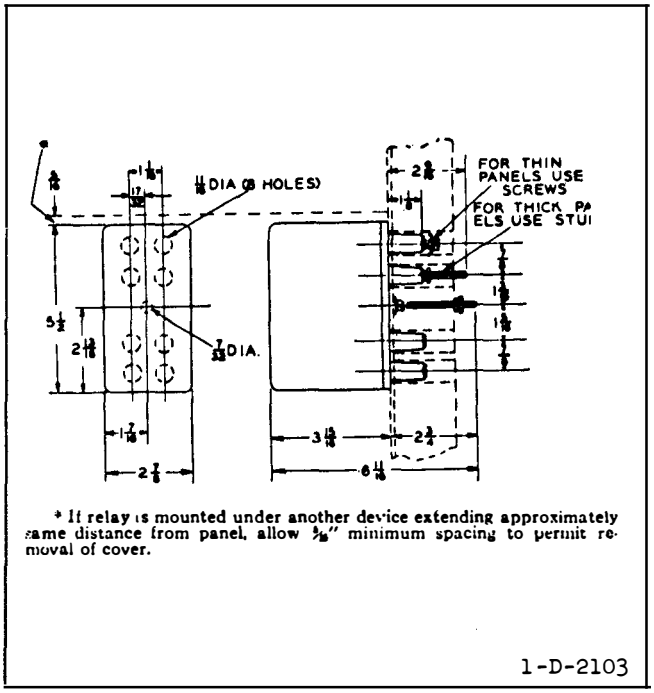


Fig. 3 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.



* If relay is mounted under another device extending approximately same distance from panel, allow $\frac{3}{16}$" minimum spacing to permit removal of cover.

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

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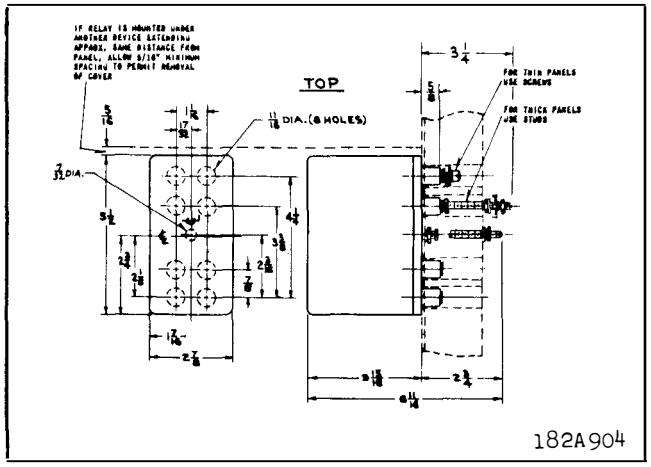

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

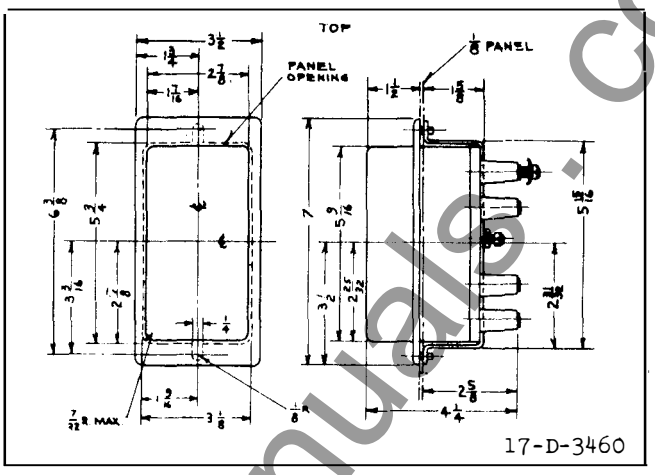

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

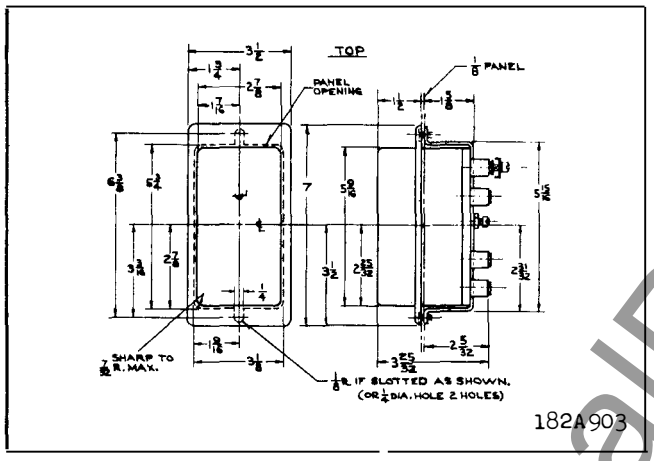

Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

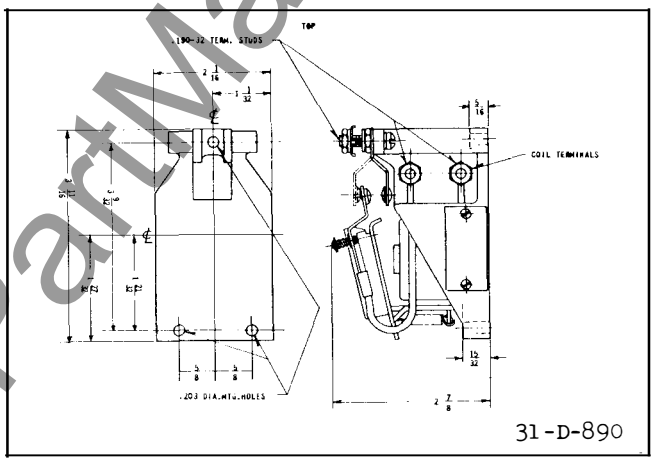

Fig. 8 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

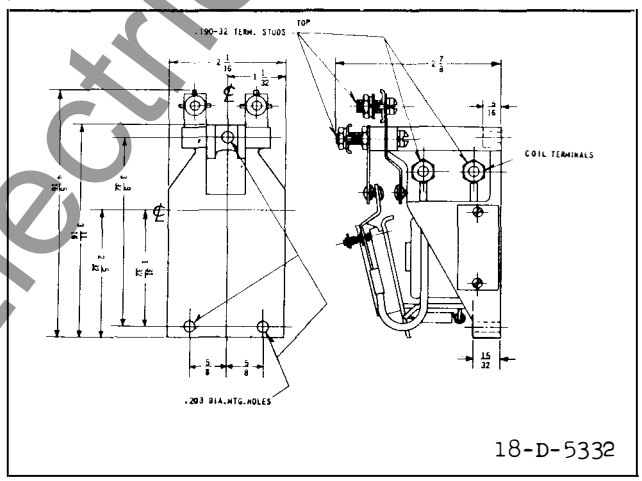

Fig. 9 Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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RELAY DEPARTMENT **NEWARK, N. J.**

Printed in U. S. A.

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- 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751D
*Denotes change from superseded issue.

EFFECTIVE JUNE 1965

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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 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

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 nameplate reading.

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32''	3/64''
2B	5/32''	—
SPDT	5/32''	3/64''
DPDT	1/8 - 9/64''	3/64''

	Break Contact Follow (1)	(2)
2M	—	—
2B	1/32 - 3/64''	0.020-0.031''
SPDT	3/64''	0.031''
DPDT	3/64''	0.031''

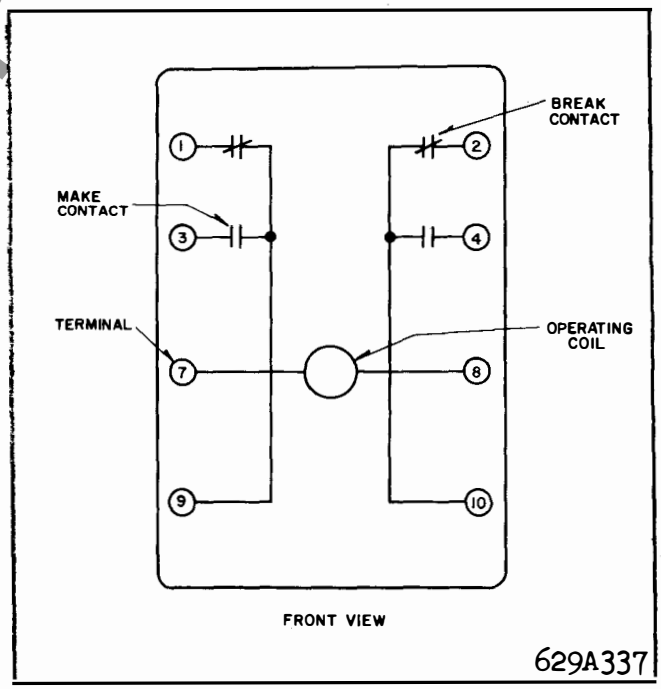

*Fig. 1 Internal Schematic for Type SG relay in front connected case.

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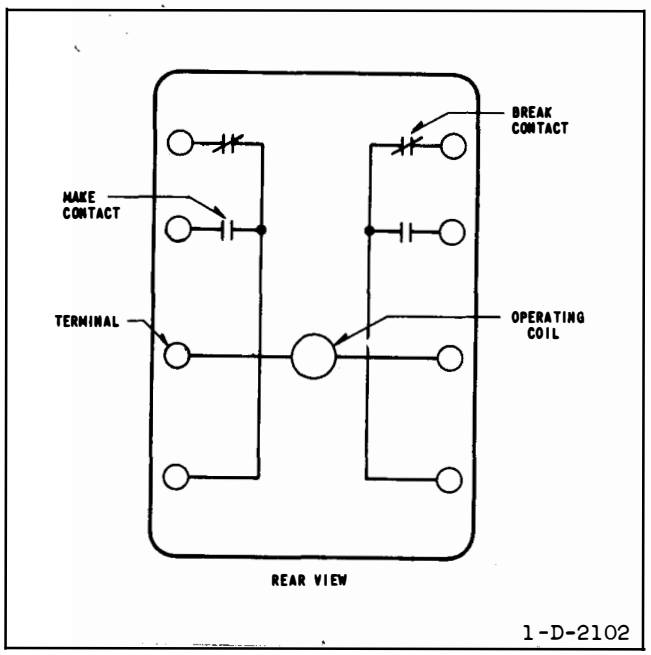

*Fig. 2 Internal Connections for Closed Type SG Relay.

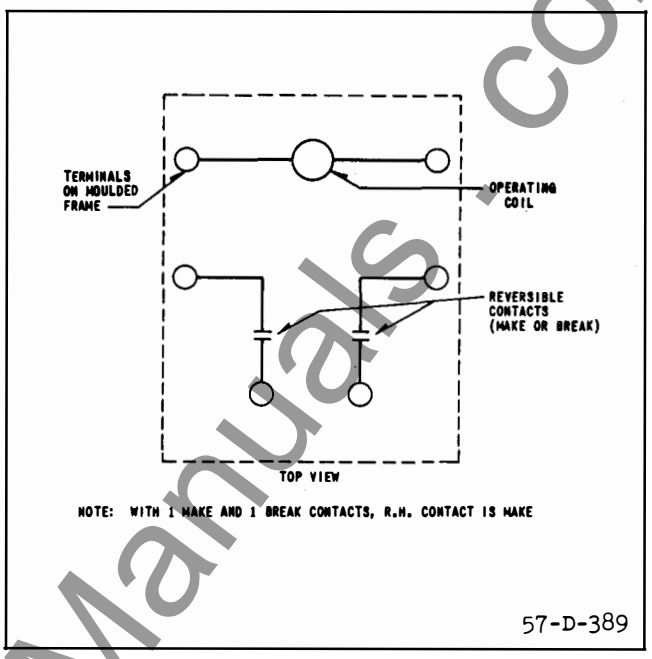

*Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

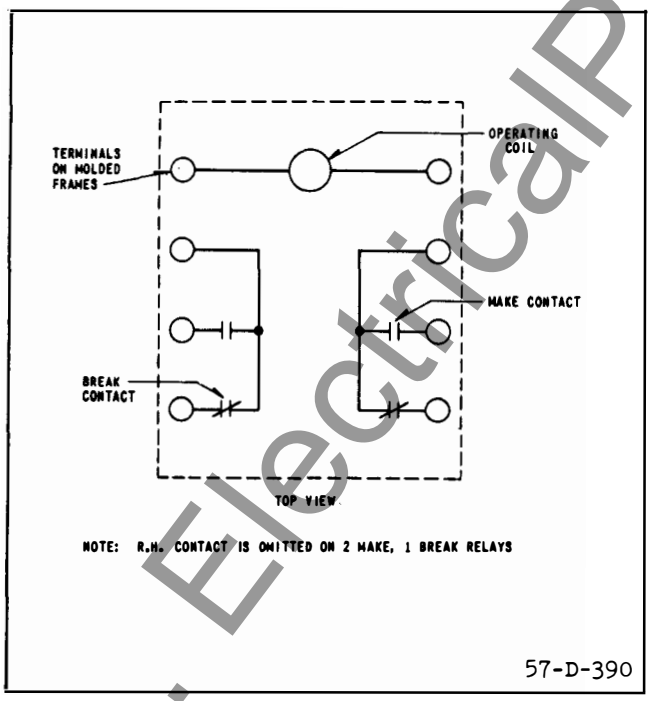

*Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

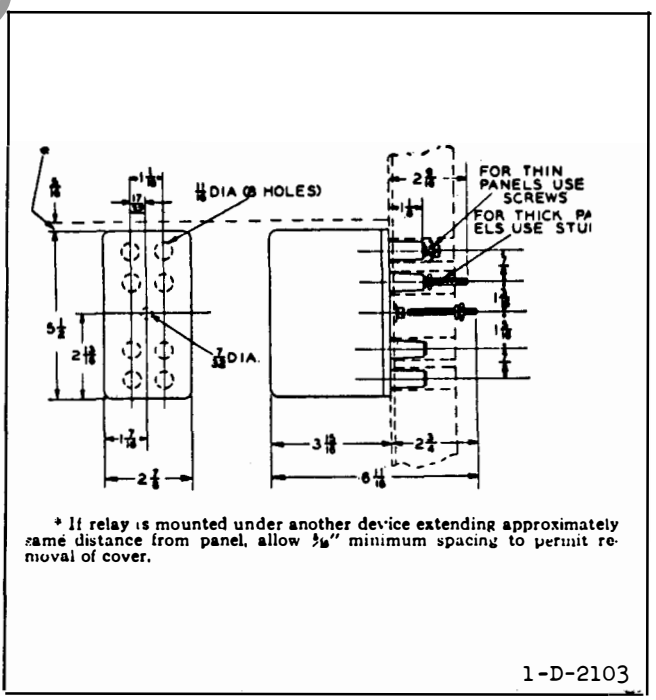

*Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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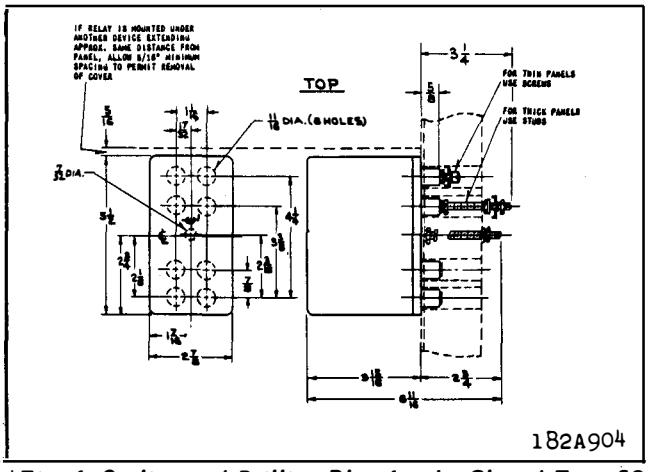

*Fig. 6 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

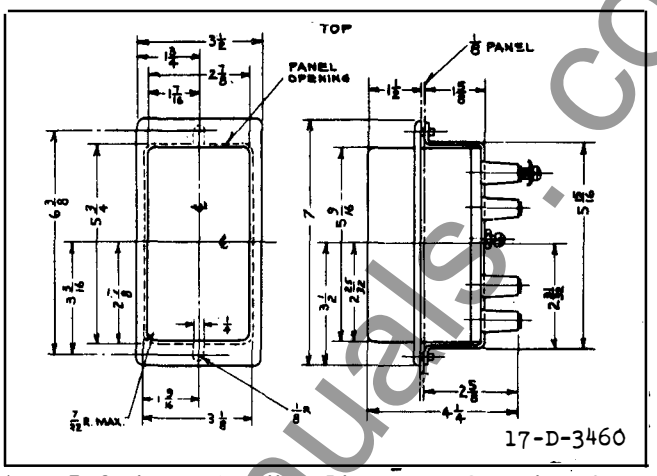

*Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

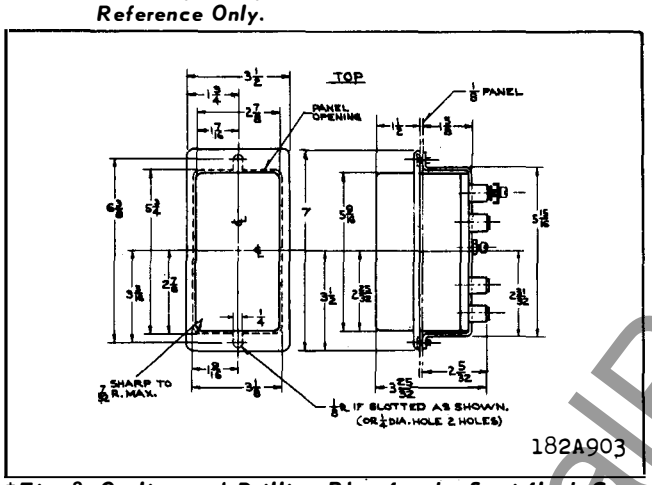

*Fig. 8 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

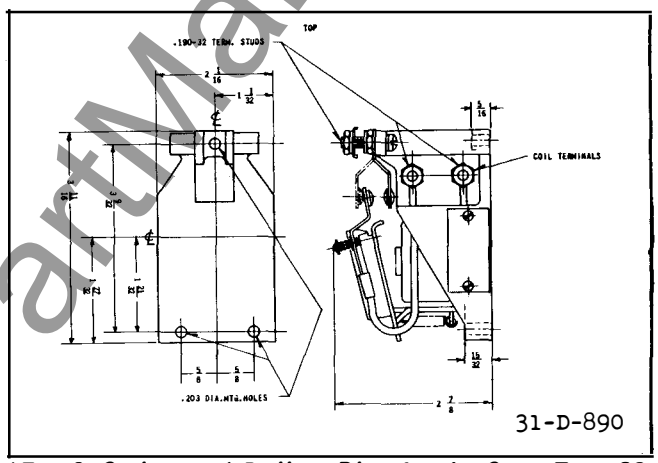

*Fig. 9 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

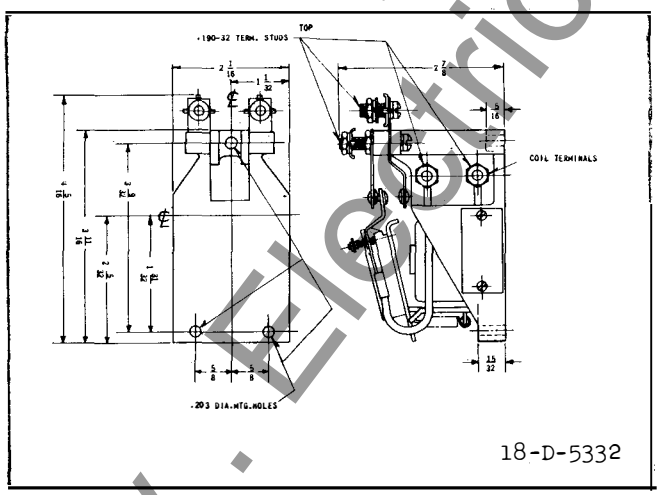

*Fig. 10. Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

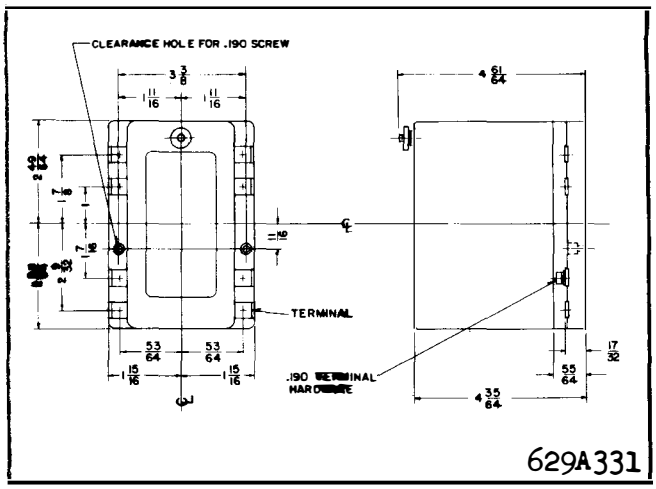

*Fig. 11 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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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 575-50 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751D
*Denotes change from superseded issue.

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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 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

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 nameplate reading.

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow	Break Contact Follow (1)	Break Contact Follow (2)
2M	5/32''	3/64''	–	–
2B	5/32''	–	1/32- 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
DPDT	1/8- 9/64''	3/64''	3/64''	0.031''

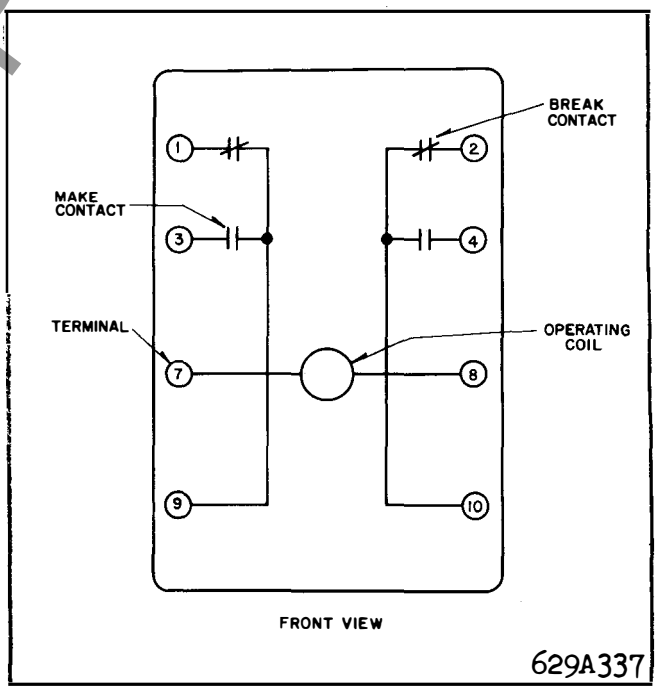

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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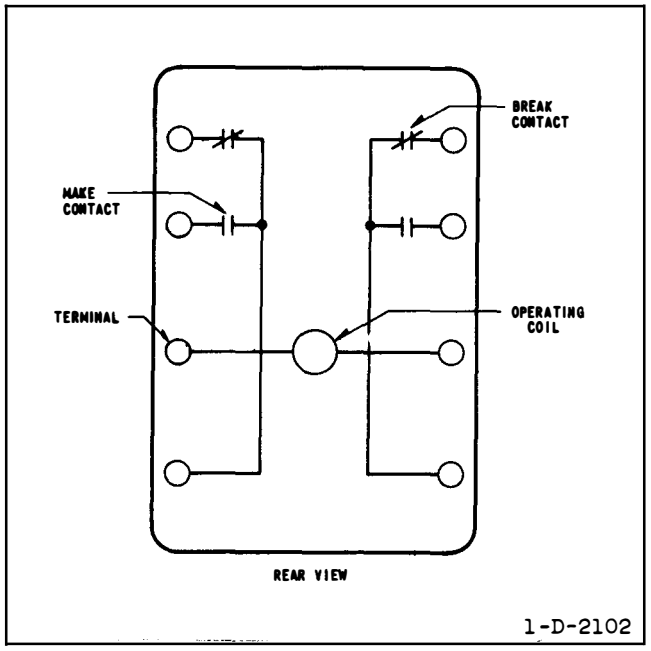


*Fig. 2 Internal Connections for Closed Type SG Relay.

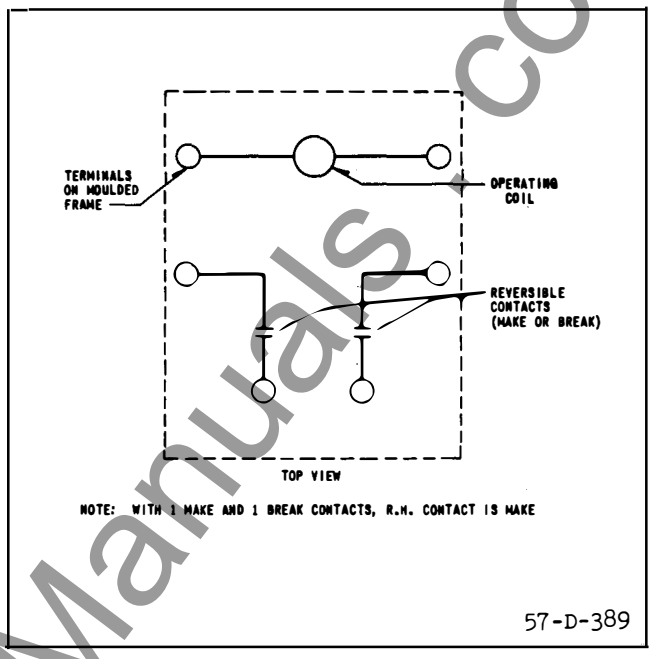


*Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

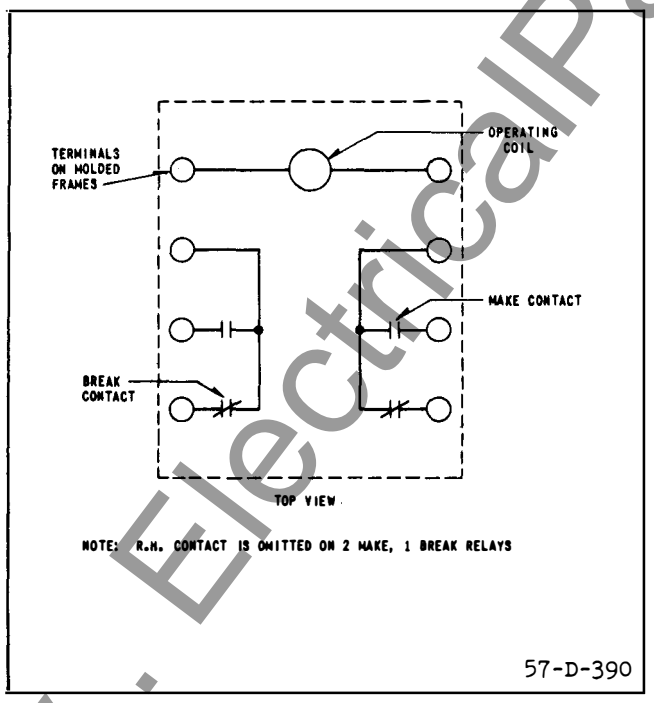
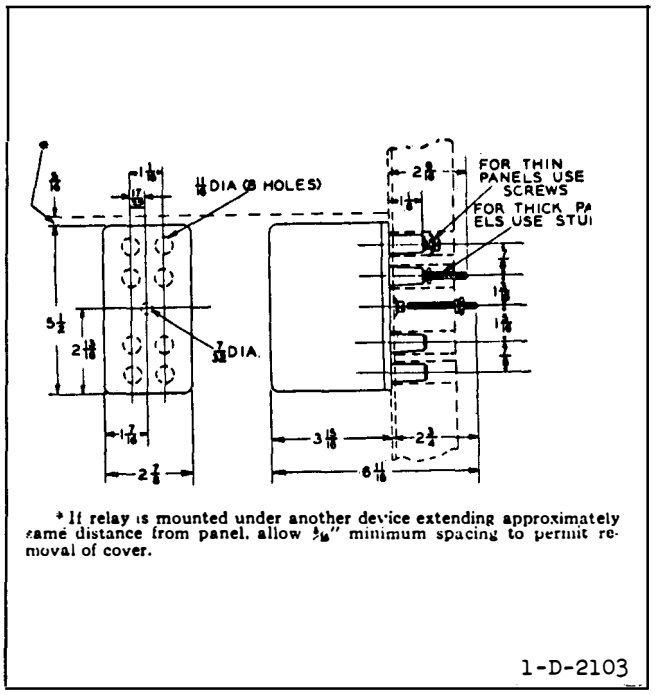


*Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.



* If relay is mounted under another device extending approximately same distance from panel, allow 5/16" minimum spacing to permit removal of cover.

*Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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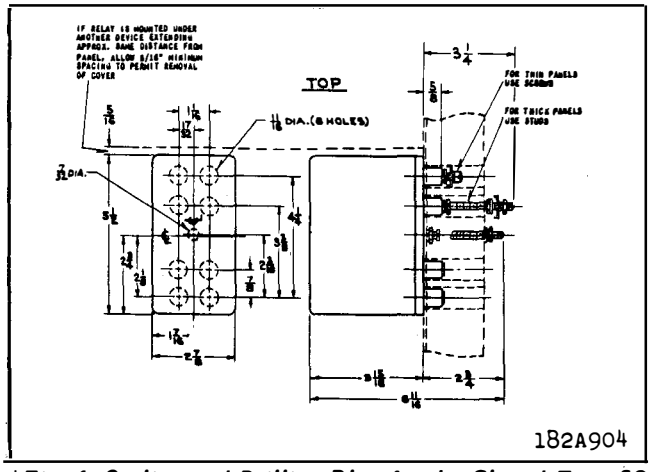

*Fig. 6 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

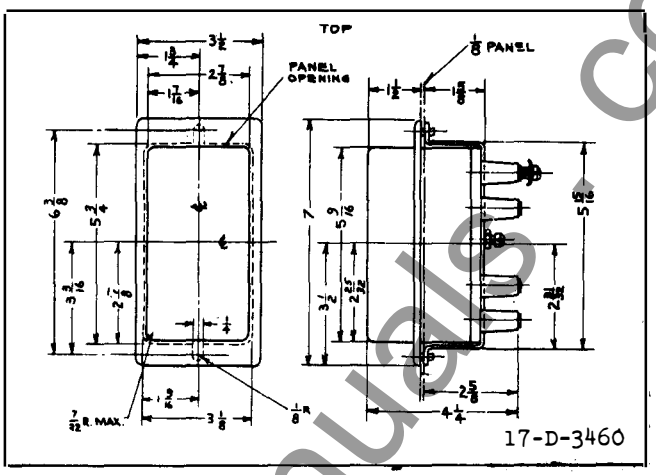

*Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

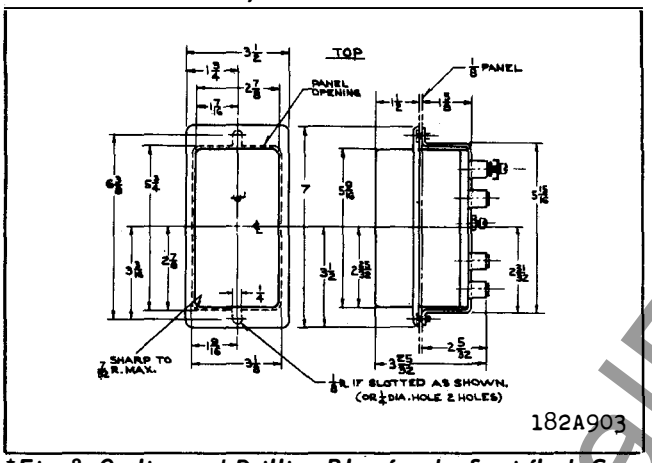

*Fig. 8 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

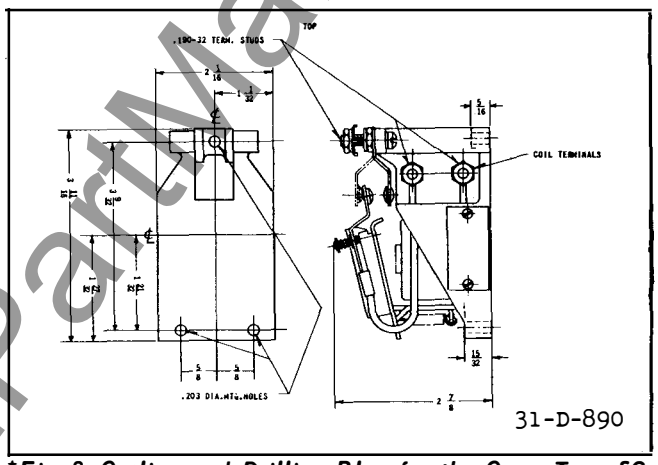

*Fig. 9 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

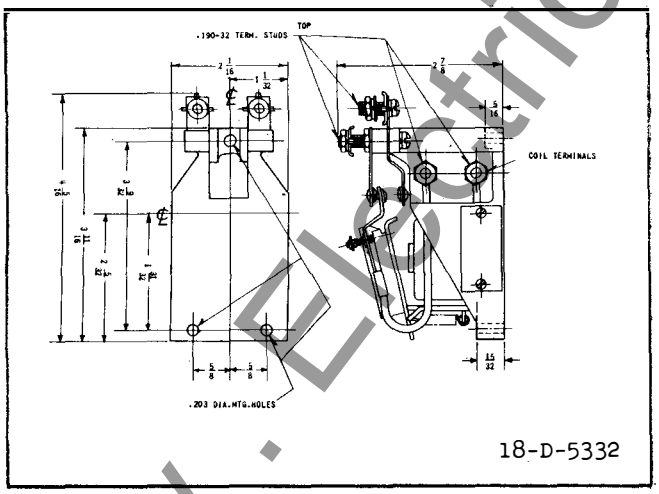

*Fig. 10. Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

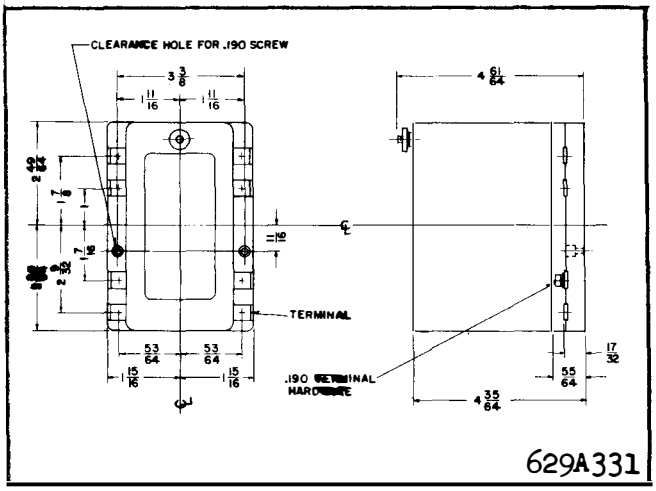

*Fig. 11 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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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- 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 elèments 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. See Table I for proper contact adjustment. The assembly of the moving contact fingers on the armature block is arranged to provide spring follow with either make or break stationary contacts.

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SUPERSEDES I.L. 41-751D
*Denotes change from superseded issue.

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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 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.

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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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2B	5/32''	–	1/32-3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
DPDT	1/8-9/64''	3/64''	3/64''	0.031''

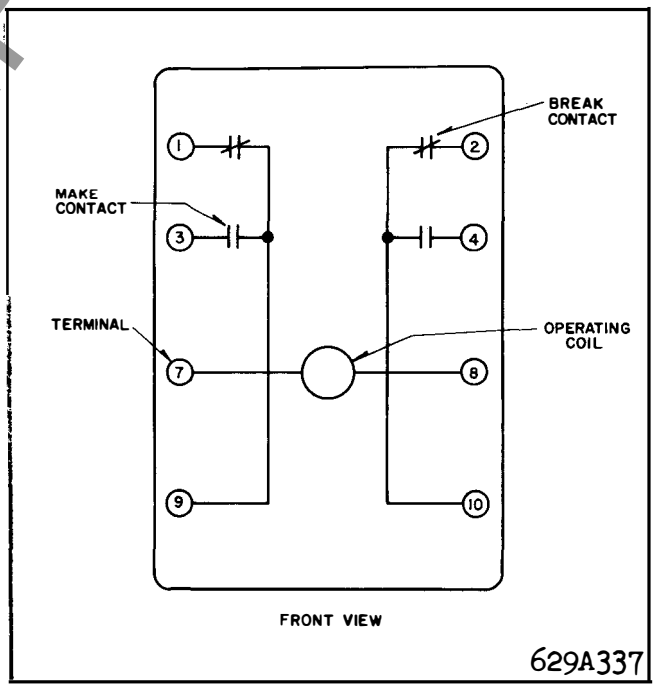

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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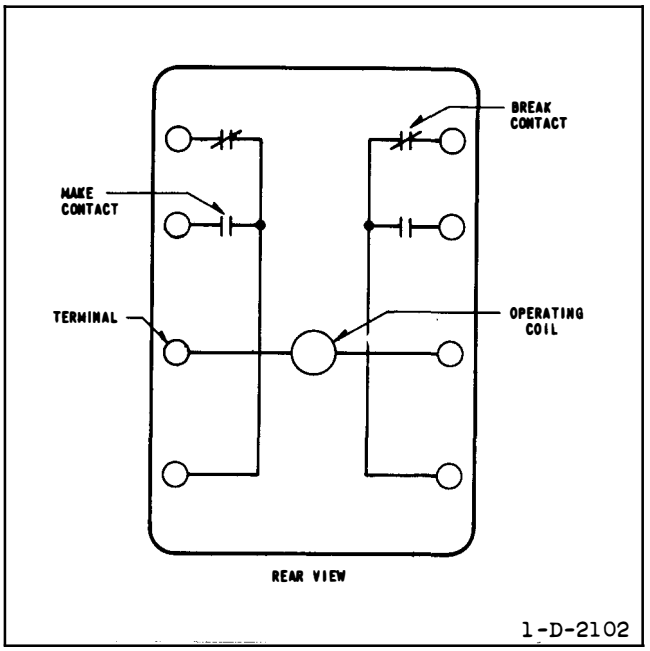


*Fig. 2 Internal Connections for Closed Type SG Relay.

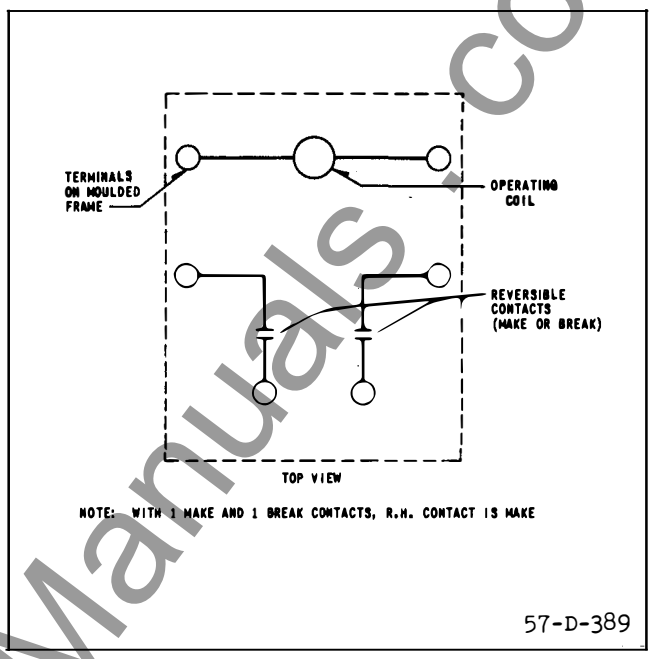


*Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

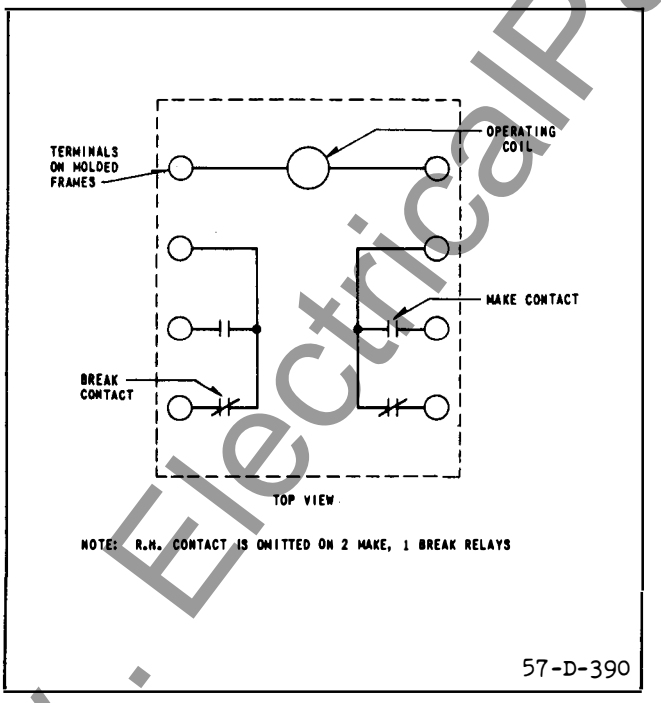
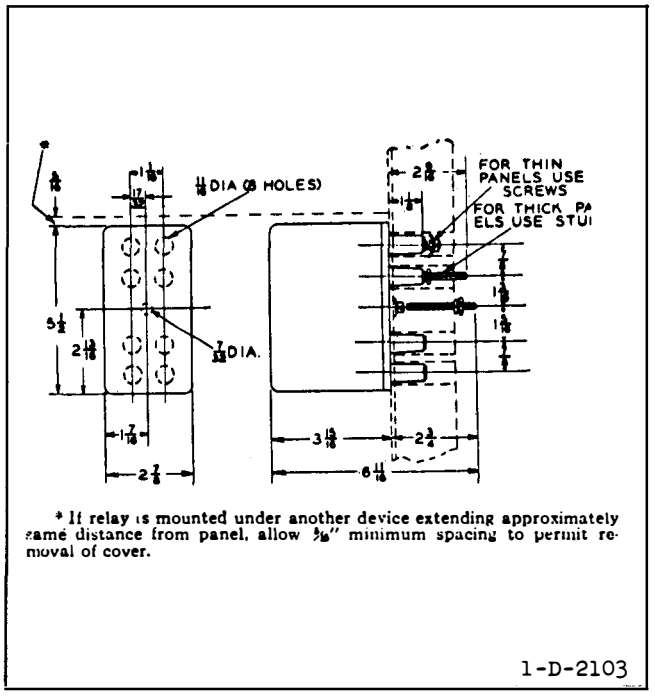


*Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.



* If relay is mounted under another device extending approximately same distance from panel, allow 1/16" minimum spacing to permit removal of cover.

*Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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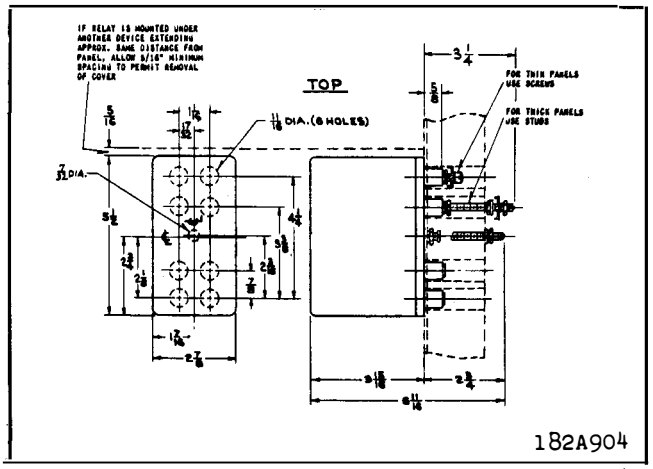

*Fig. 6 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

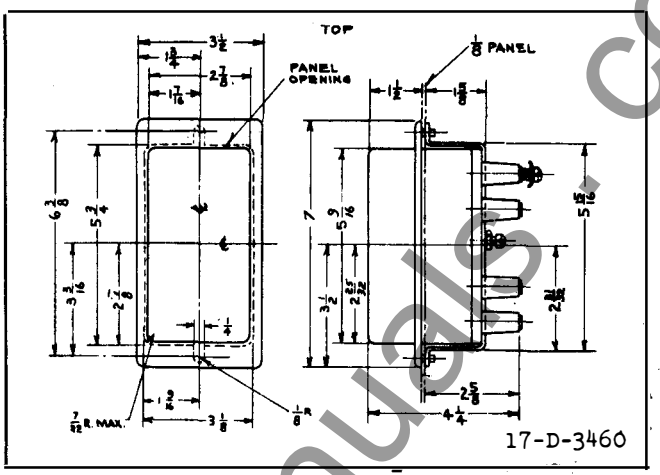

*Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

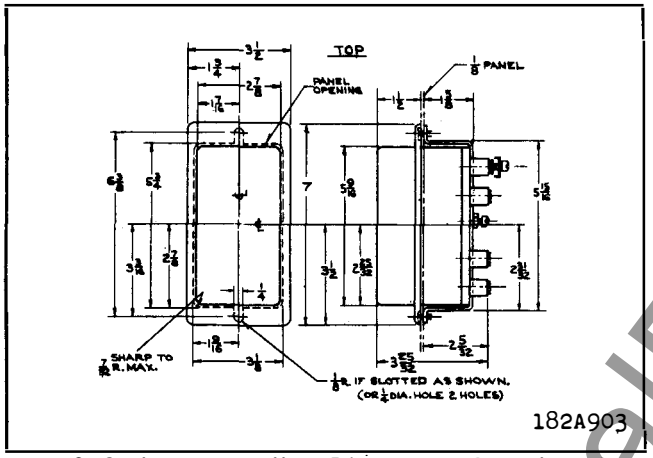

*Fig. 8 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

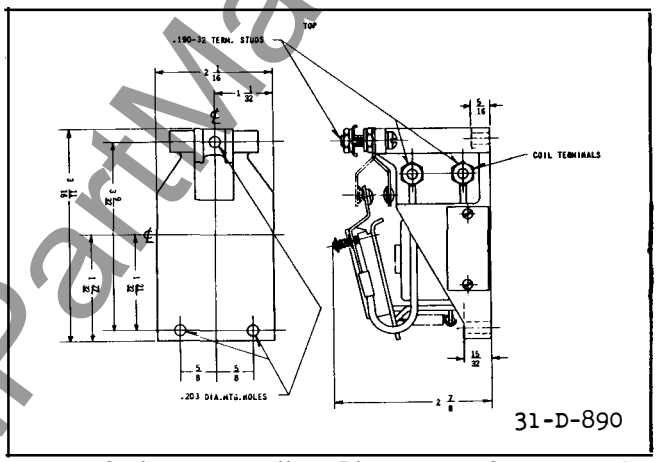

*Fig. 9 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

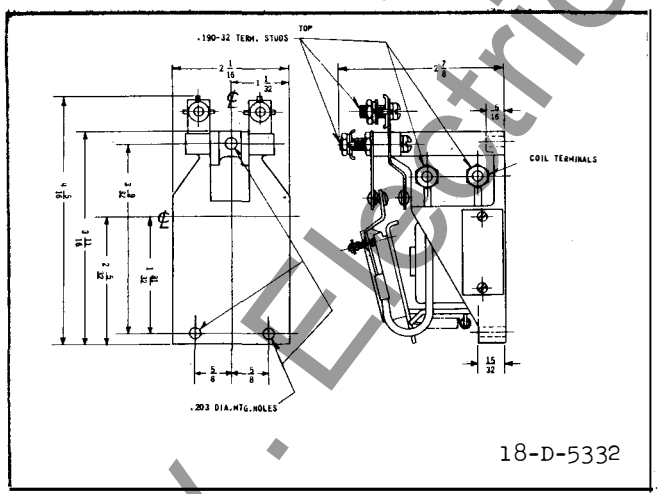

*Fig. 10. Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

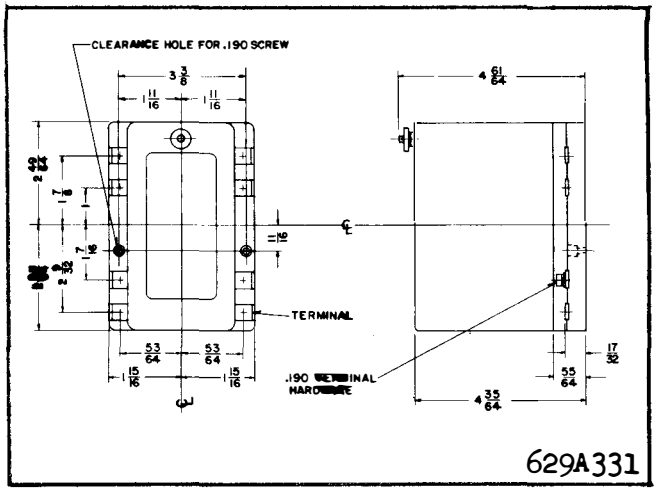

*Fig. 11 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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

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- 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. See Table I for proper contact adjustment. 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.

EFFECTIVE OCTOBER 1967

SUPERSEDES I.L. 41-751F
*Denotes change from superseded issue.

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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 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 closed gap volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 cycles) is 16, at the same power factor. The watt consumption at rated d-c voltage is 3.5.

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

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32''	3/64''
2B	5/32''	—
SPDT	5/32''	3/64''
DPDT	1/8 - 9/64''	3/64''

	Break Contact Follow	
	(1)	(2)
2M	—	—
2B	1/32 - 3/64''	0.020-0.031''
SPDT	3/64''	0.031''
DPDT	3/64''	0.031''

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	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 nameplate reading.

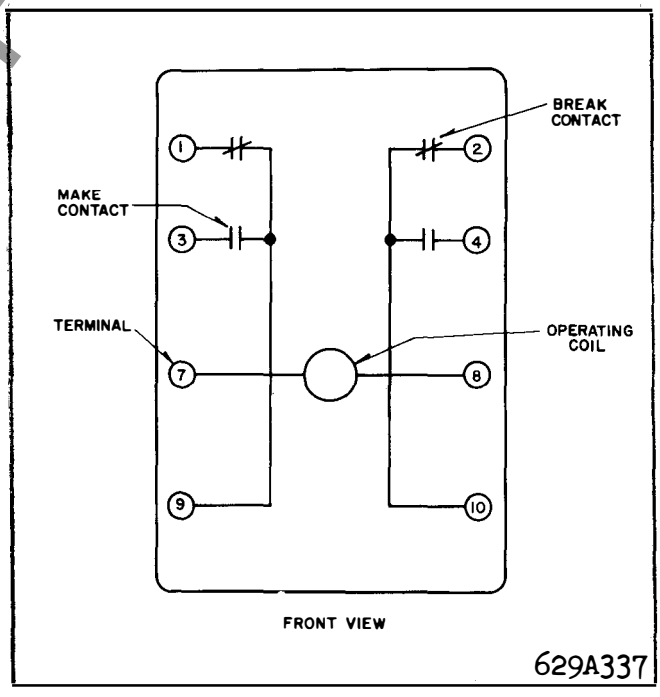

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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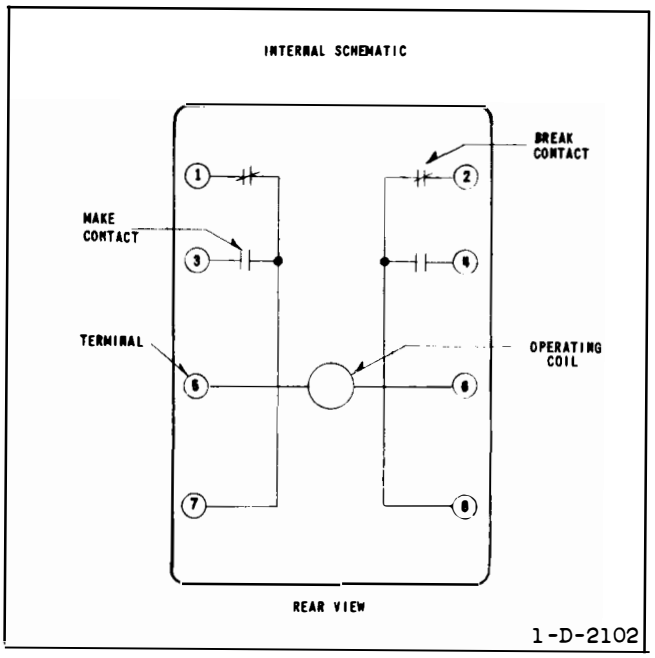

*Fig. 2 Internal Connections for Closed Type SG Relay.

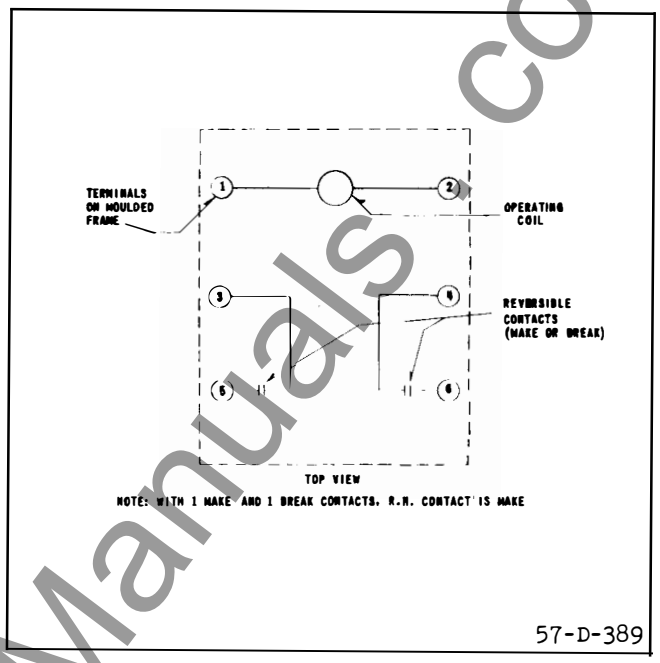

*Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

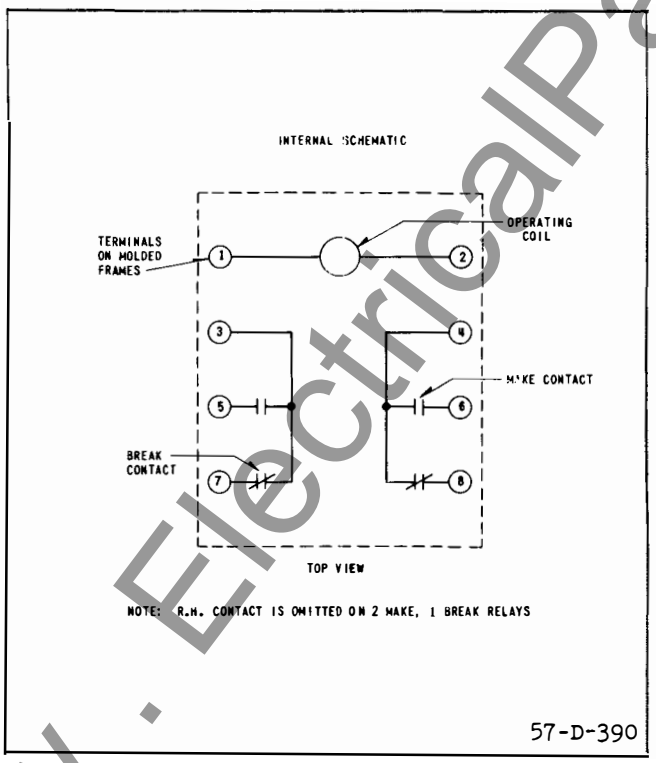

*Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

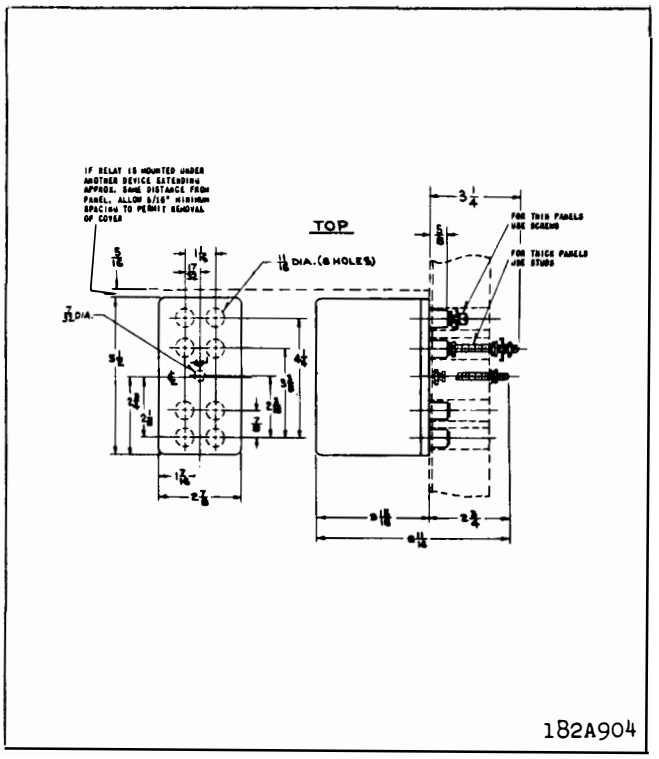

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

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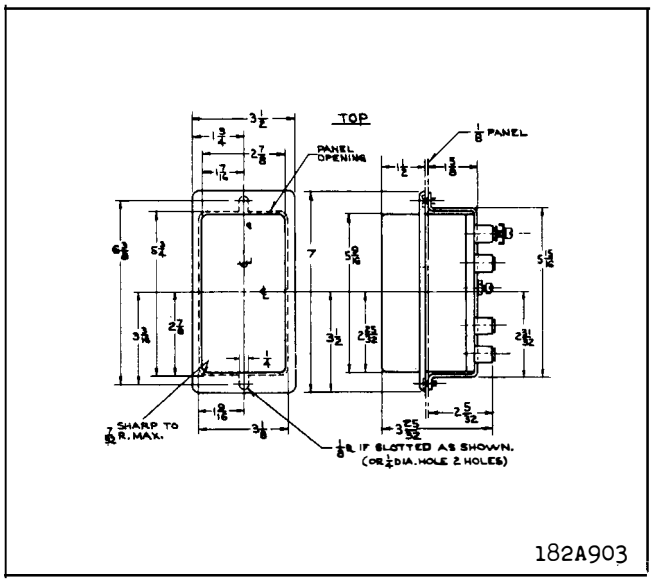

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

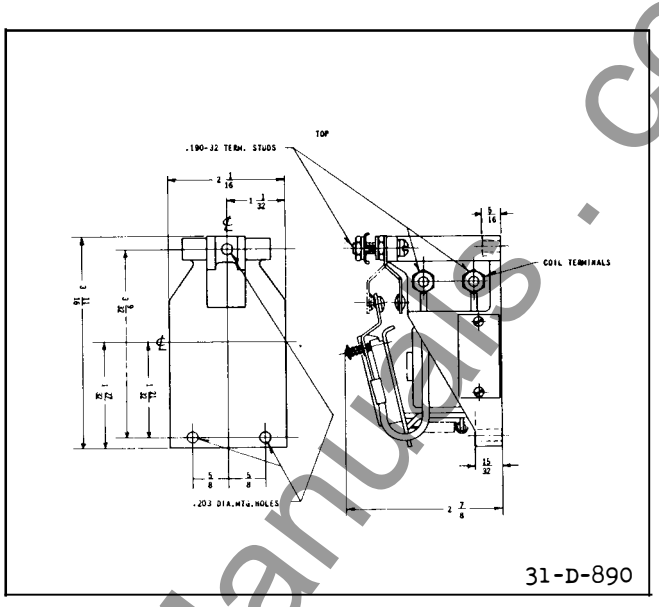

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

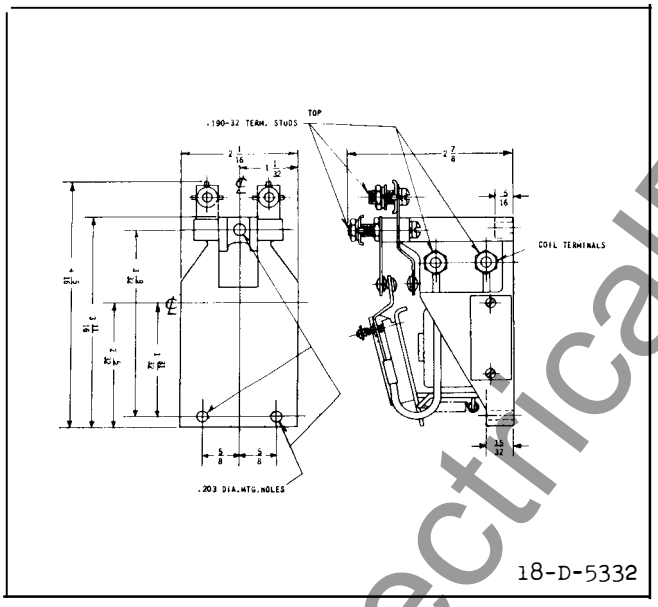

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

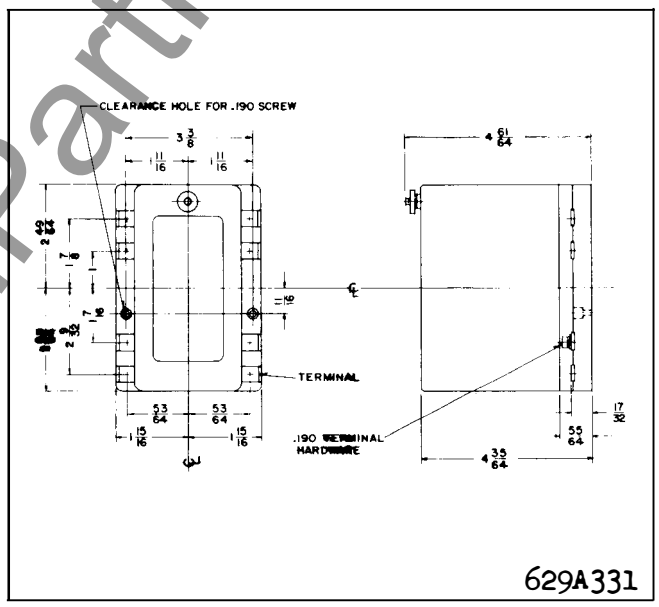

Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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

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 575-50 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. See Table I for proper contact adjustment. 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.

EFFECTIVE OCTOBER 1967

SUPERSEDES I.L. 41-751F
*Denotes change from superseded issue.

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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 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 closed gap volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 cycles) is 16, at the same power factor. The watt consumption at rated d-c voltage is 3.5.

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

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow	Break Contact Follow (1)	Break Contact Follow (2)
2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
DPDT	1/8 - 9/64''	3/64''	3/64''	0.031''

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 nameplate reading.

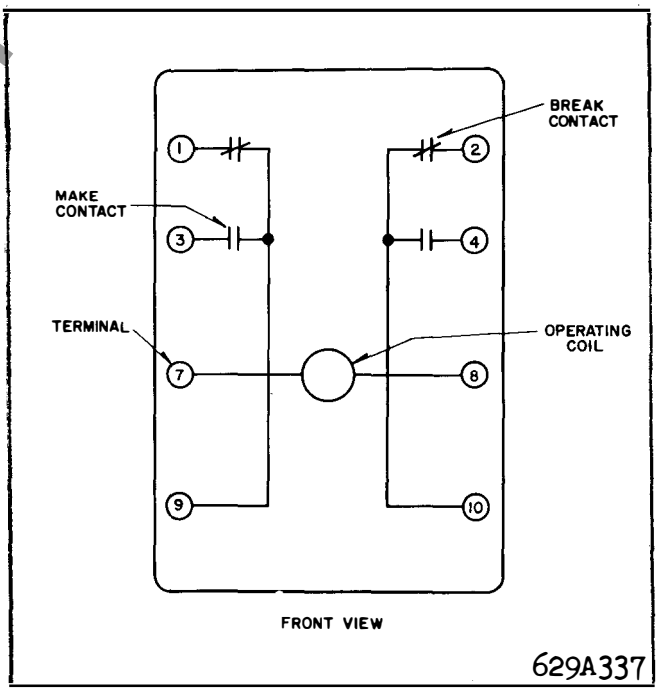

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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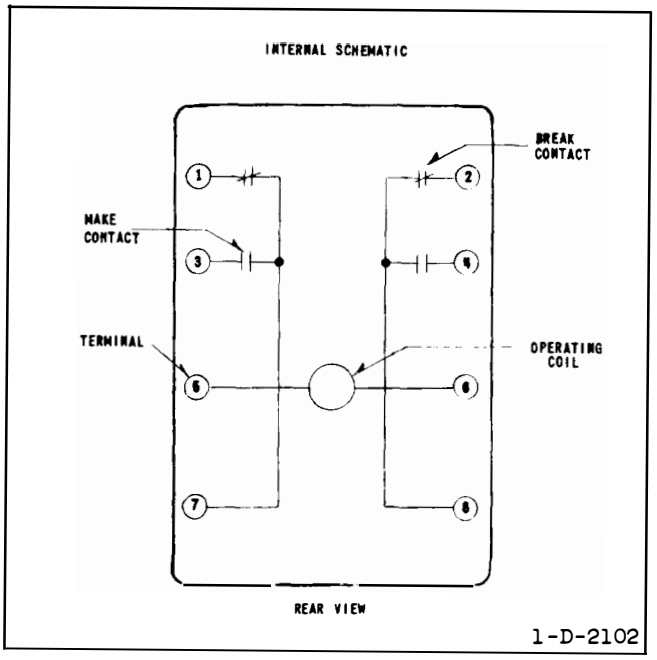

Fig. 2 Internal Connections for Closed Type SG Relay.

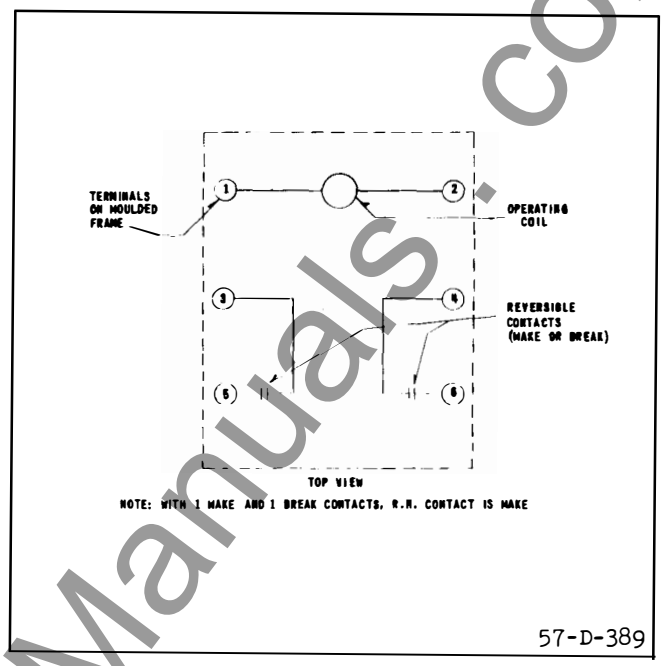

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

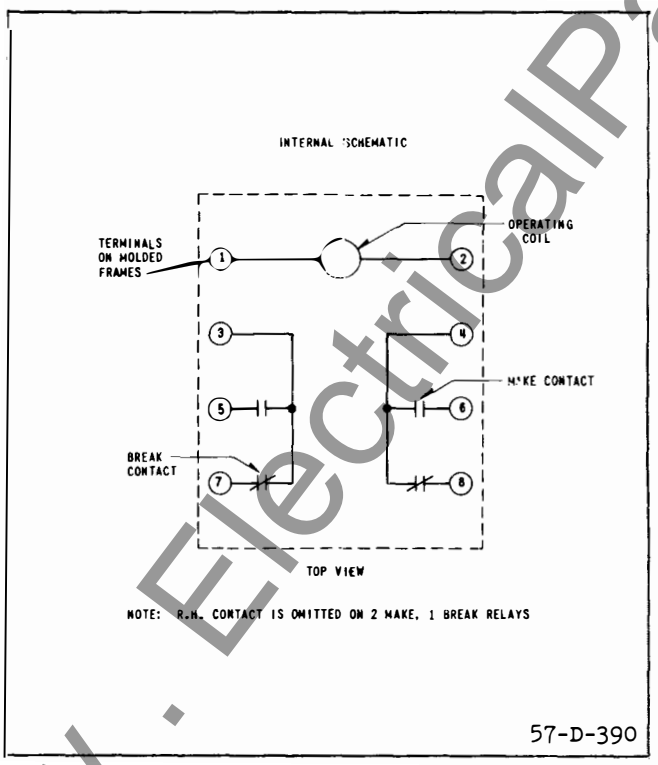

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

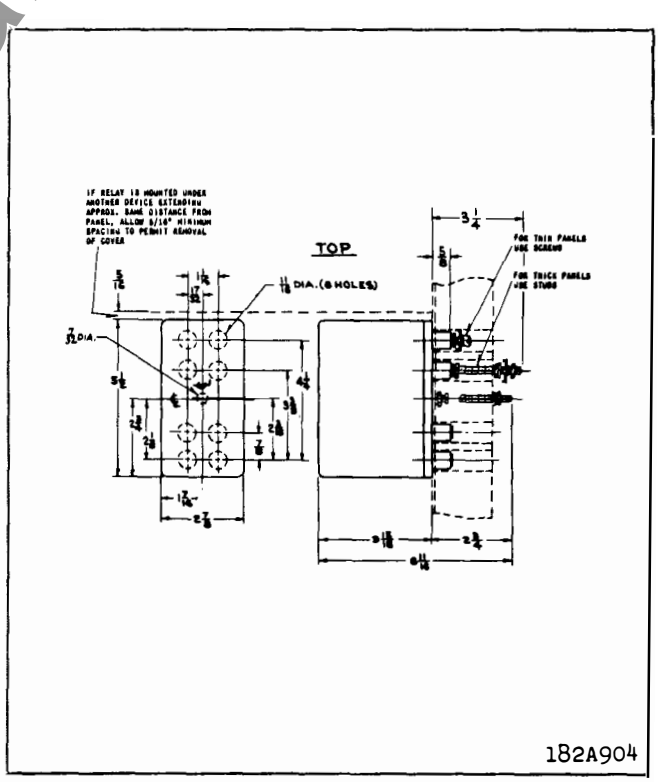

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

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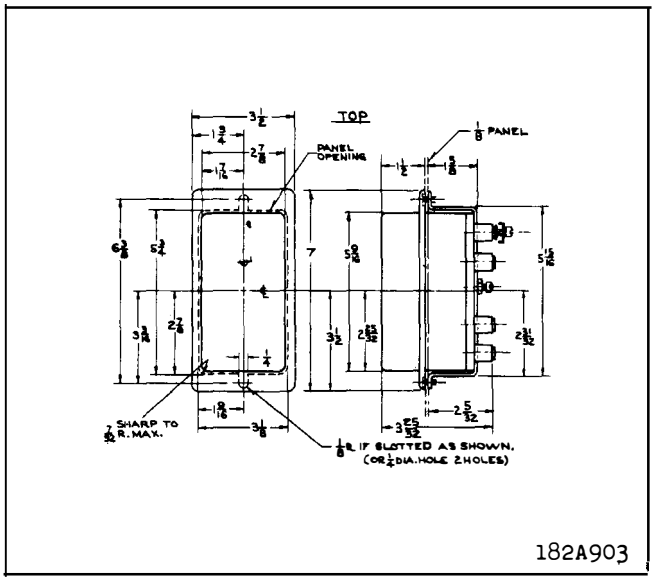

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

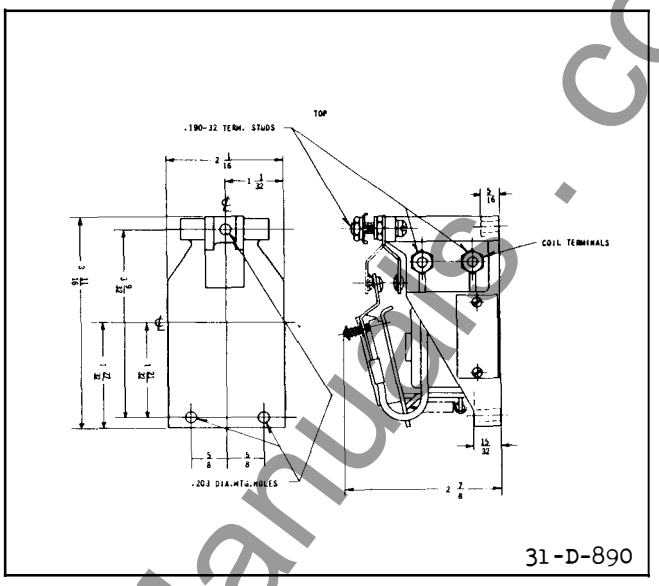

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

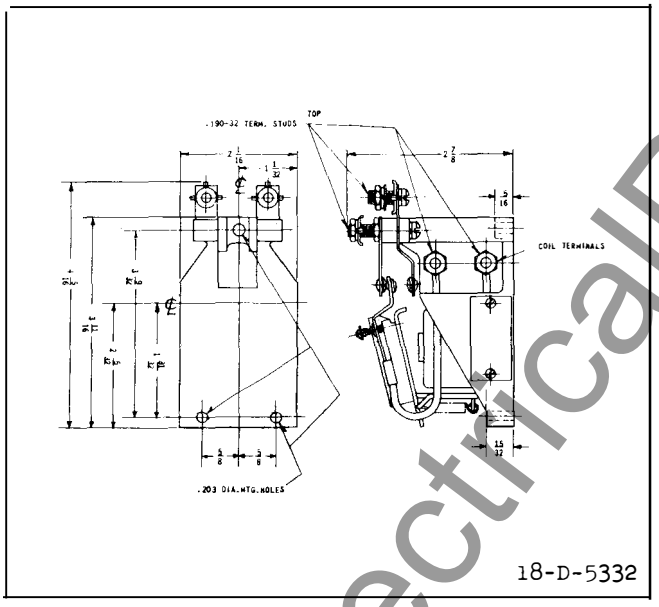

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

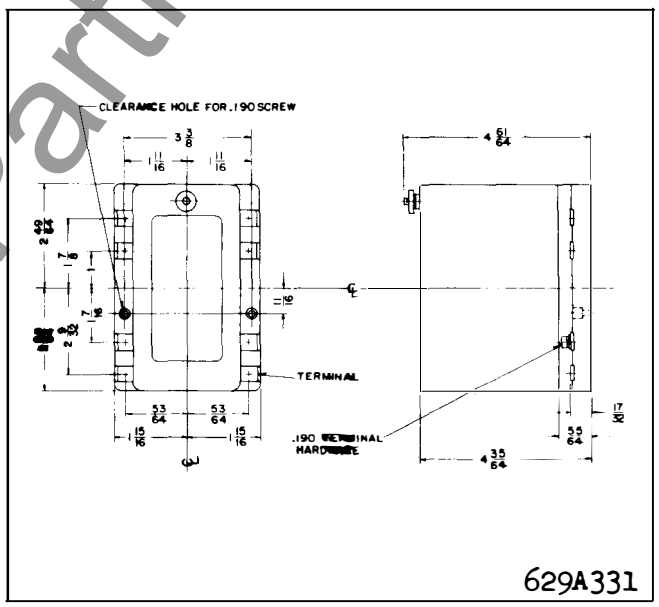

Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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

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.

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115, 230, 440 and 575- 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.

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SUPERSEDES I.L. 41-751G
*Denotes change from superseded issue.

EFFECTIVE FEBRUARY 1968

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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 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.

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SPDT	5/32''	3/64''
DPDT	1/8 - 9/64''	3/64''

	Break Contact Follow	
	(1)	(2)
2M	—	—
2B	1/32 - 3/64''	0.020-0.031''
SPDT	3/64''	0.031''
DPDT	3/64''	0.031''

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

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24	15	50	50
48	8	35	45
115	2.4	20	30
230	0.75	2.5	20
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REPAIR AND RENEWAL PARTS

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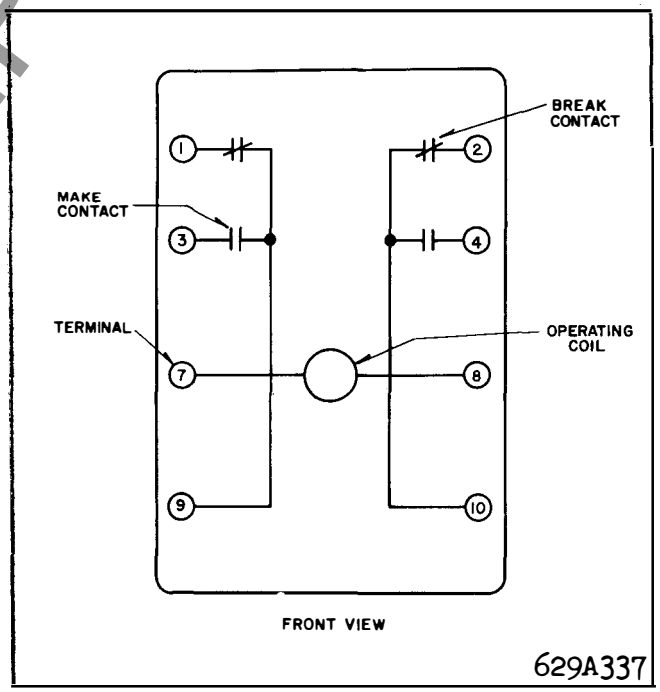

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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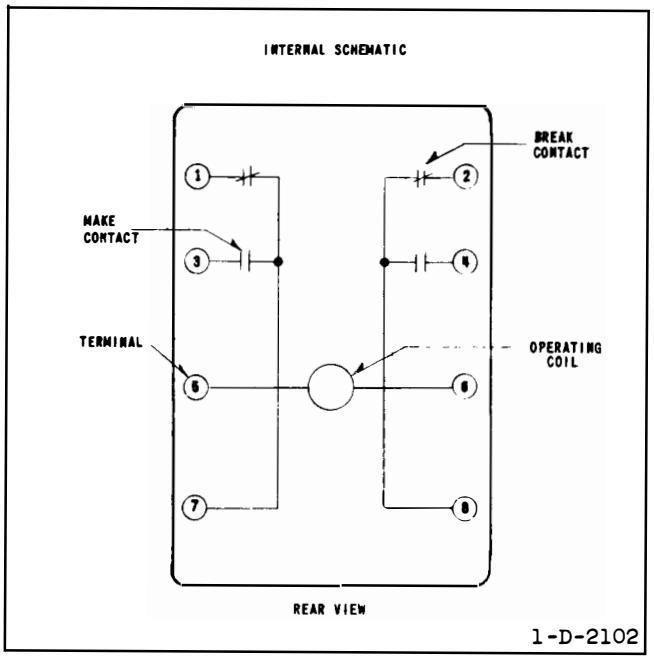

Fig. 2 Internal Connections for Closed Type SG Relay.

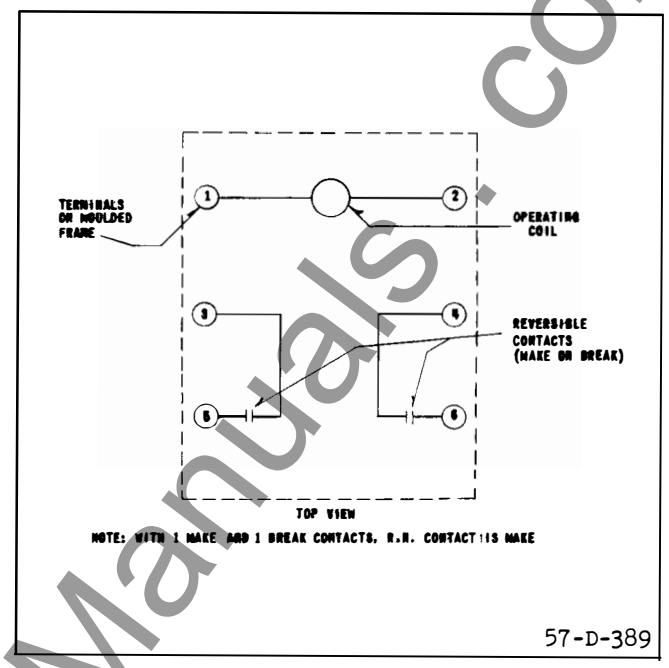

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

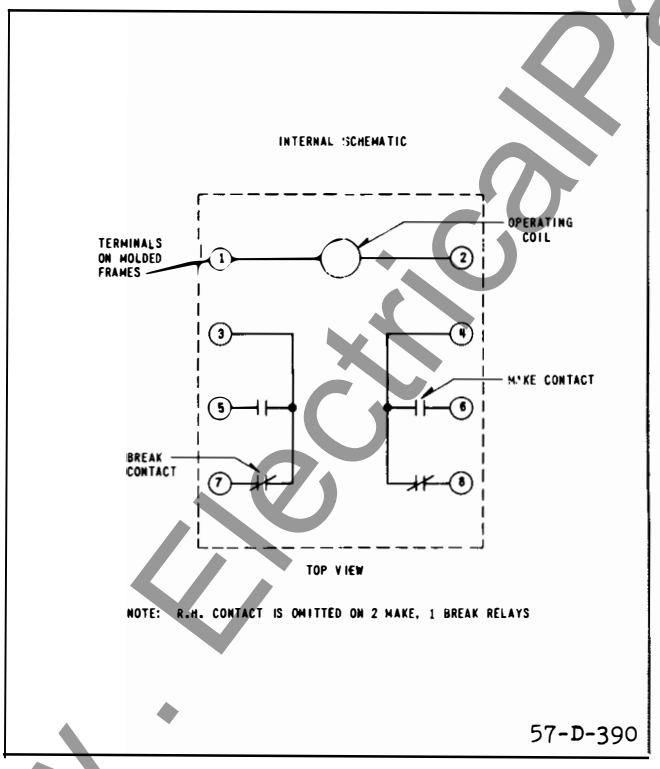

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

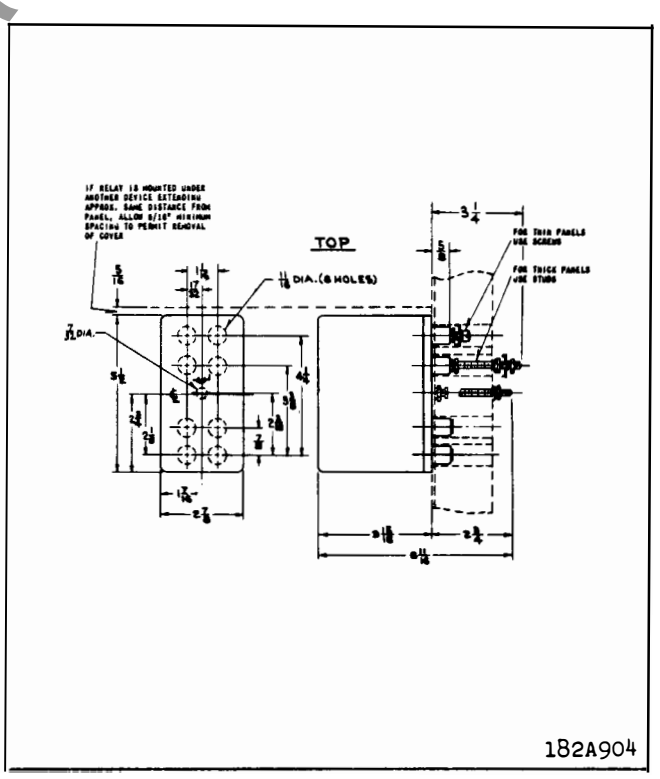

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

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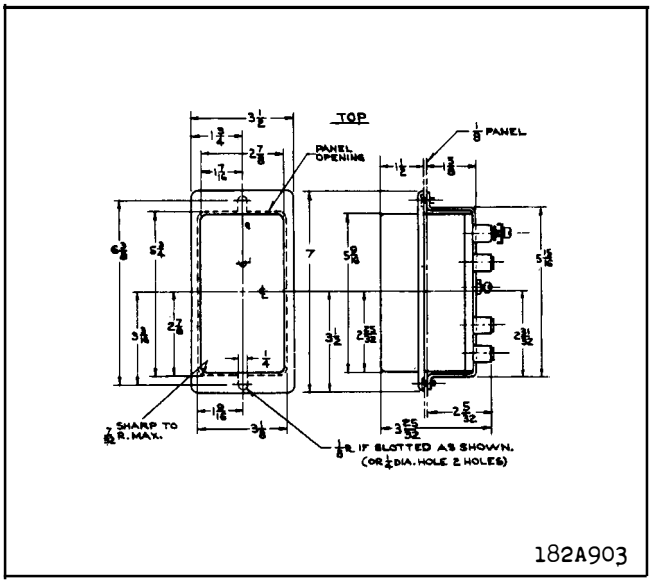

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

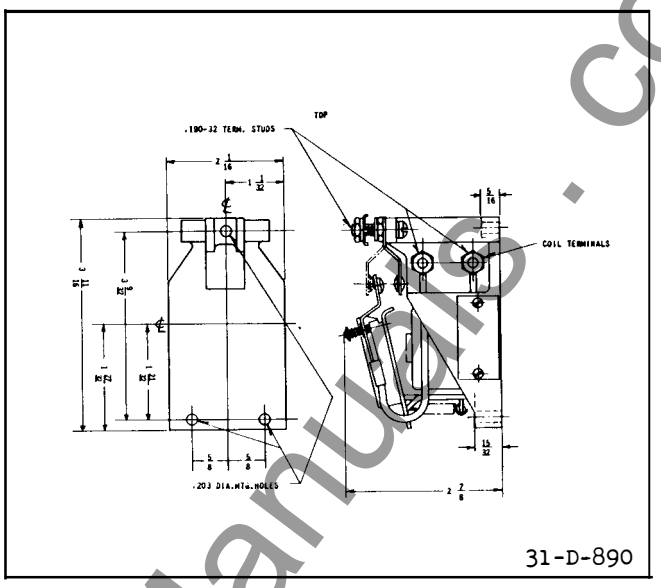

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

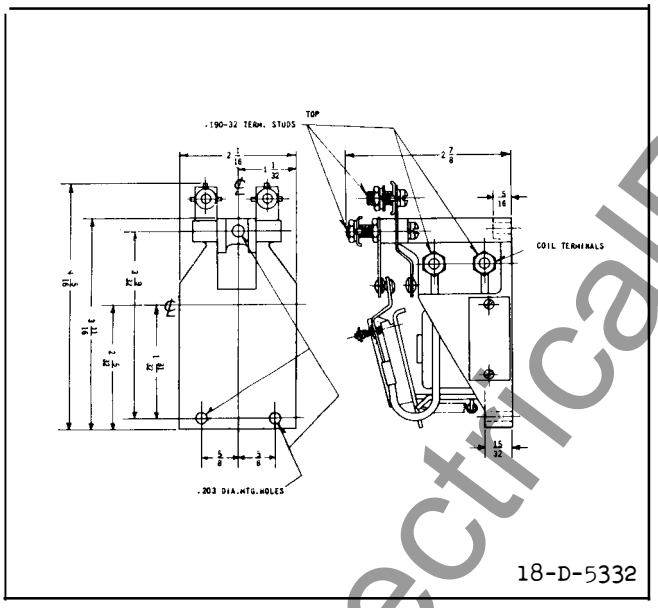

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

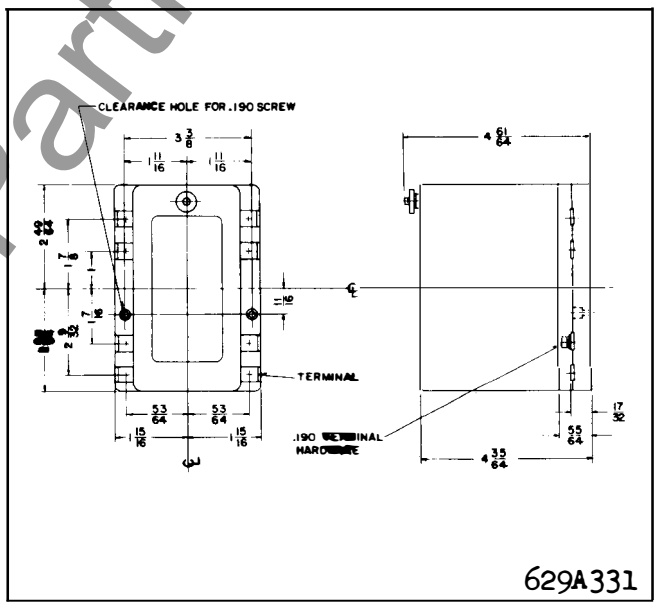

Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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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- 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751H
*Denotes Change From Superseded Issue.

EFFECTIVE AUGUST 1968

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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 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 closed gap volt-ampere burden at rated voltage (60 cycles) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 cycles) is 16, at the same power factor. The watt consumption at rated d-c voltage is 3.5.

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

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32''	3/64''
2B	5/32''	–
SPDT	5/32''	3/64''
DPDT	1/8- 9/64''	3/64''

	Break Contact Follow	
	(1)	(2)
2M	–	–
2B	1/32- 3/64''	0.020-0.031''
SPDT	3/64''	0.031''
DPDT	3/64''	0.031''

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.

* COIL DATA – DC

Rating Amps	Volts	Resistance: Ohms	1-Second Rating: Amps
1	–	2.5	35
2	–	0.7	55
3	–	0.33	85
4	–	0.2	110
5	–	0.1	185
–	5	12	–
–	12	48	–
–	24	185	–
–	32	294	–
–	48	725	–
–	62.5	1152	–
–	125	4650	–
–	250	17000	–

INTERRUPTING RATING IN AMPERES

Volts	D-C 1 Contact	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 nameplate reading.

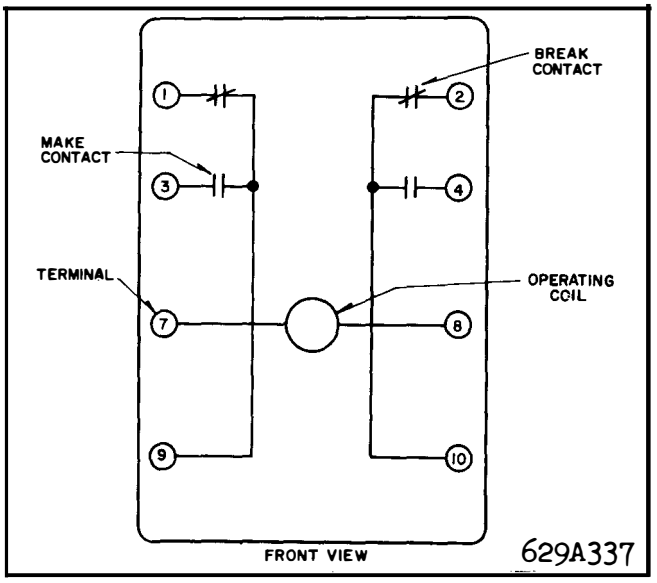

Fig. 1 Internal Schematic for Type SG relay in front connected case.

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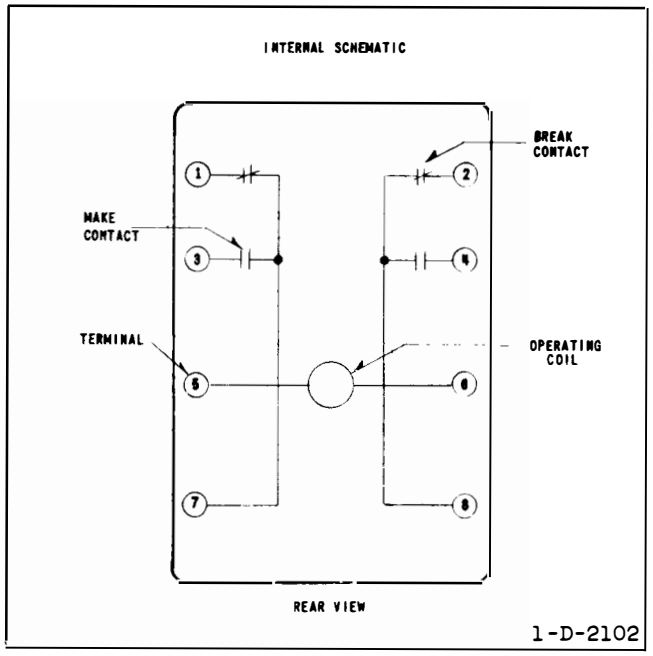

Fig. 2 Internal Connections for Closed Type SG Relay.

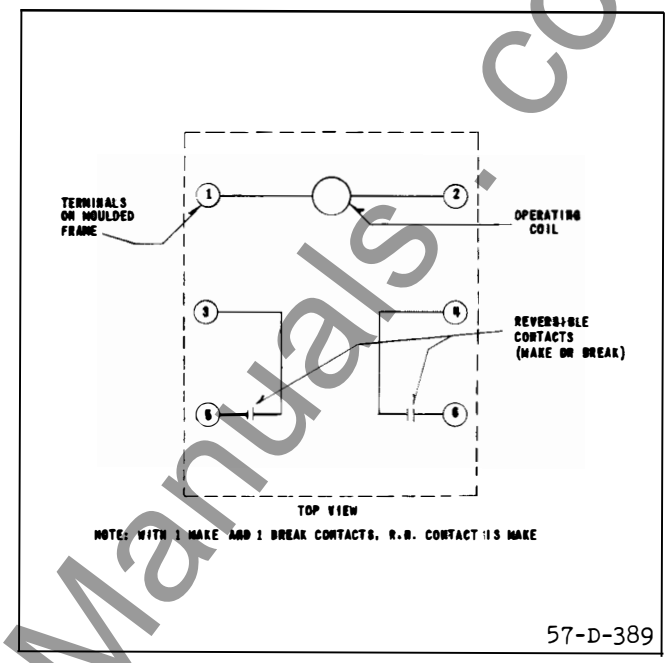

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

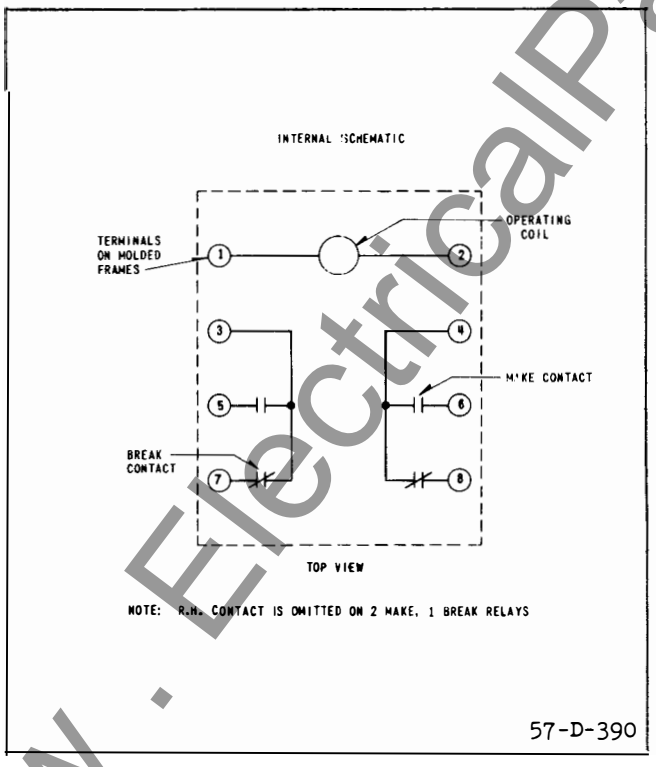

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

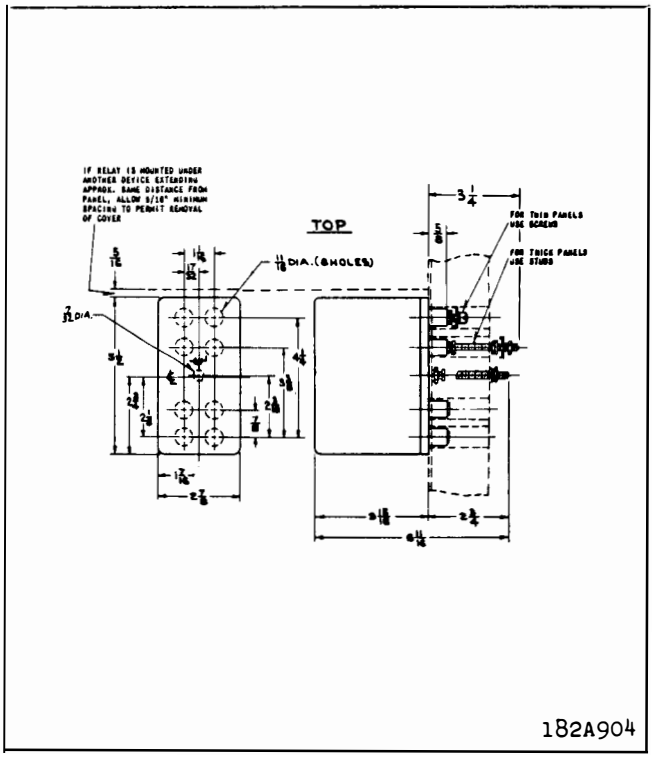

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

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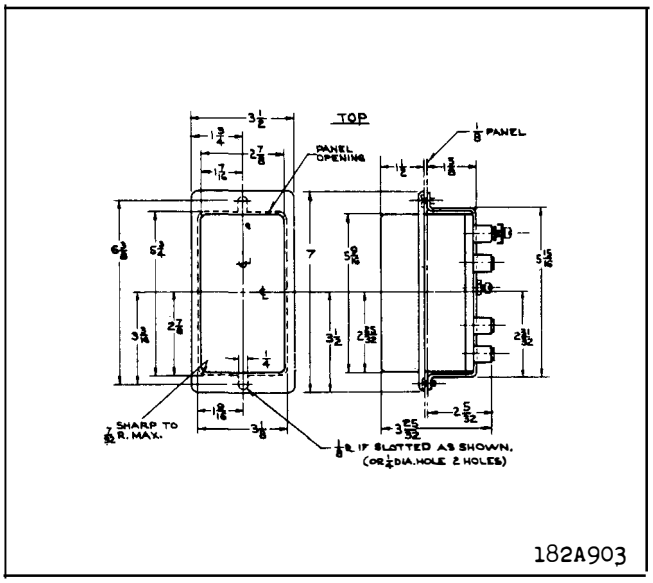

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

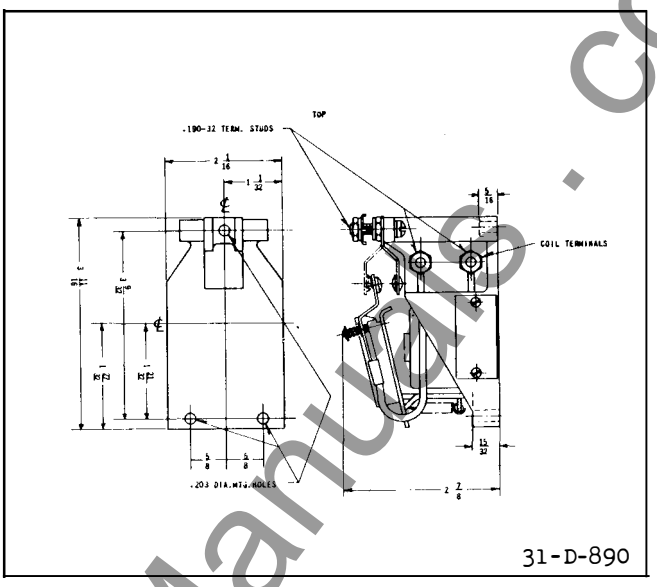

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

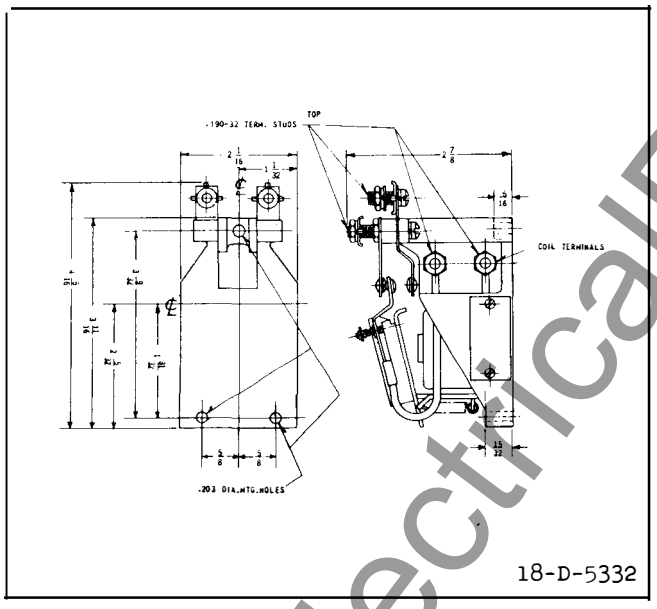

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

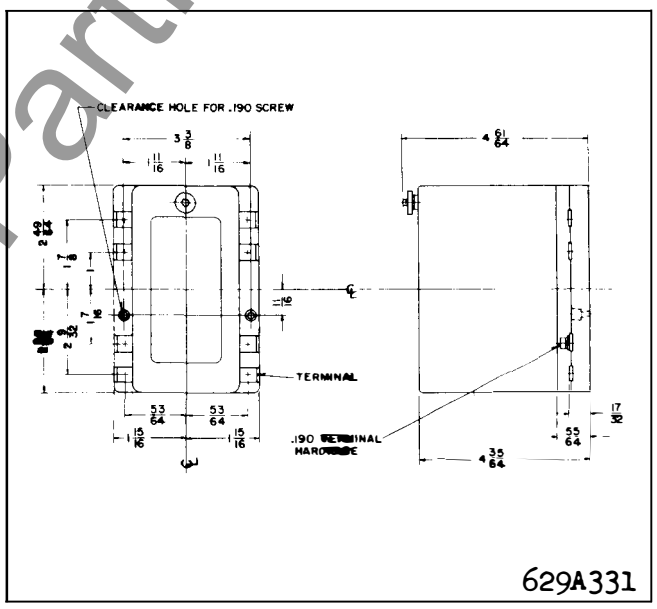

Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

CAUTION: Before putting protective relays into service, remove all blocking which may have been inserted for the purpose of securing the parts during shipment, make sure that all moving parts operate freely, inspect the contacts to see that they are clean and close properly, and operate the relay to check the settings and electrical connections.

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

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 dc

115 and 230 Volts - 25 hertz

115, 230, 440 and 575-50 or 60 hertz

and for higher dc or 25 hertz 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.

CONSTRUCTION & OPERATION

The SG relays are clapper-type devices designed to operate over a wide range of ac and dc voltages. When their coils are energized at or above pickup rating, the moving contacts on the armature assembly, close and/or open with the two stationary contacts to activate the electrically independent contact circuits.

Closed types are supplied with two make and two break contacts. Open types (front connected) can be supplied with two make and two break contacts, or with only the two make contacts which can be reversed to provide one make, one break, or two break contact circuits. Contact gap and follow should be readjusted per Table 1 after contacts have been reversed. Adjustment is accomplished by bending the stationary contacts.

Small coil springs on the moving contact arms provide adequate contact pressure to assure positive contact action between the moving and stationary contacts.

Dc types have a bronze pin on the core which serves as a stop pin for the armature, and prevents magnetic seal-in of the armature due to residual magnetism. Ac types have a non-magnetic washer at the base of the core assembly to prevent the armature from sticking in the closed-gap position. Copper shading rings are also provided on the core face of the ac types to prevent chattering of the armature.

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.

BURDEN

The closed gap volt-ampere burden at rated voltage (60 hertz) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 hertz) is 16, at the same power factor. The watt consumption at rated dc voltage is 3.5.

SUPERSEDES I.L. 41-751J
*Denotes Change from superseded issue.

EFFECTIVE JANUARY 1972

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CONTACTS

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.

INTERRUPTING RATING IN AMPERES

Volts	dc 1 Contact	2 Contacts in Series	ac 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 dc rating
.016 - .033 sec. at ac rating

Dropout: less than .016 sec. on dc or ac

COIL DATA – DC

Rating Amps	Volts	Resistance: Ohms	1-Second Rating: Amps
1	–	2.5	35
2	–	0.7	55
3	–	0.33	85
4	–	0.2	110
5	–	0.1	185
a-c			
–	5	12	–
–	12	48	–
–	24	185	–
–	32	294	–
–	48	725	–
–	62.5	1152	–
–	125	4650	–
–	250	17000	–

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32''	3/64''
2B	5/32''	–
SPDT	5/32''	3/64''
DPDT	1/8-9/64''	3/64''
Break Contact Follow		
	(1)	(2)
2M	–	–
2B	1/32-3/64''	0.020-0.031''
SPDT	3/64''	0.031''
DPDT	3/64''	0.031''

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 nameplate reading.

Relays for use on ac 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 reduce the residual magnetism after the relay is de-energized. In case the relay should be dismantled, it is important that this washer be replaced on reassembling it.

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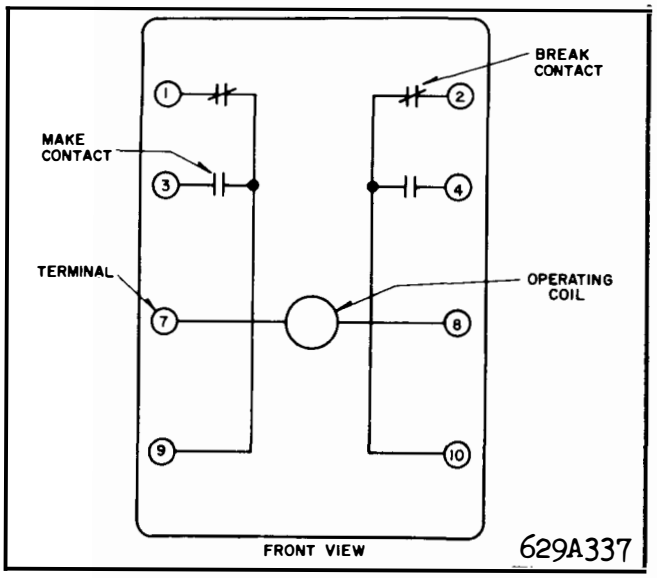

Fig. 1 Internal Schematic for Type SG relay in front connected case.

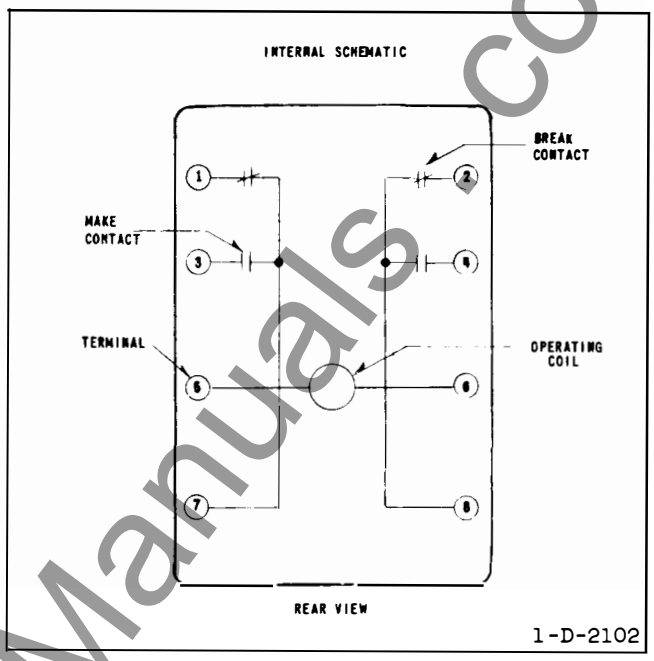

Fig. 2 Internal Connections for Closed Type SG Relay.

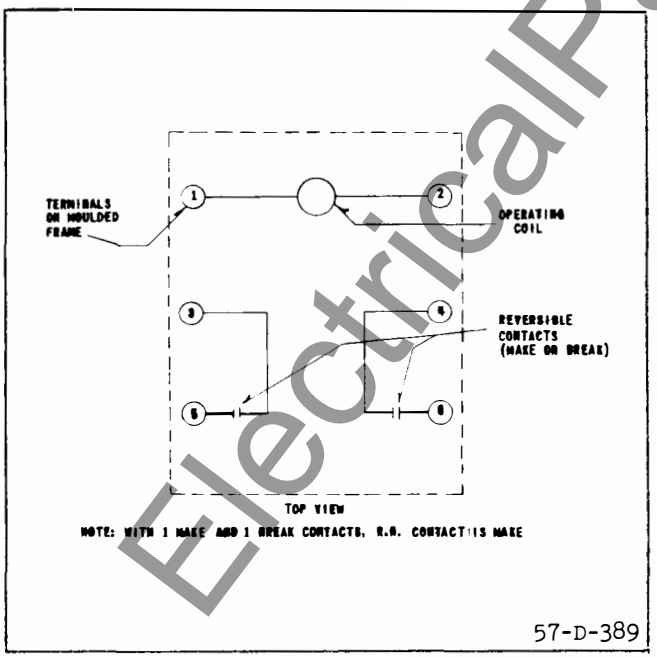

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

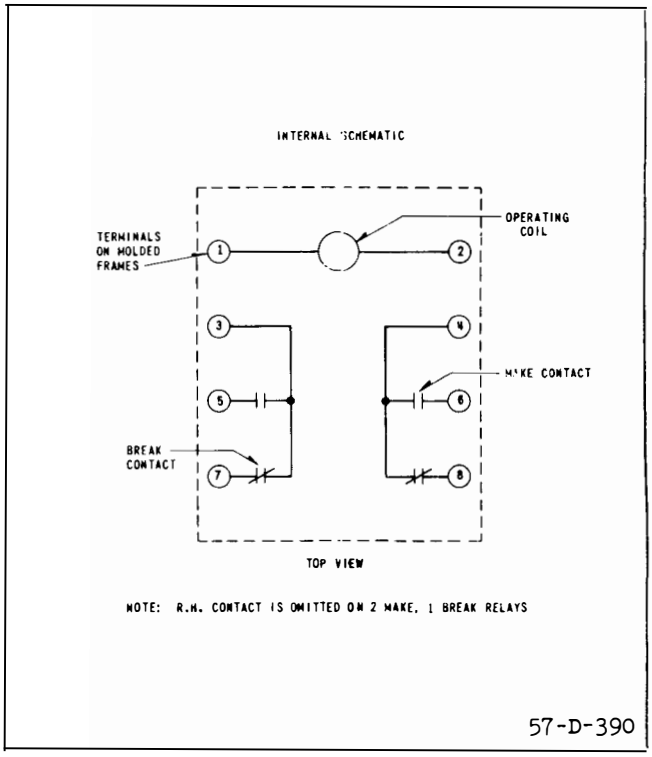

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

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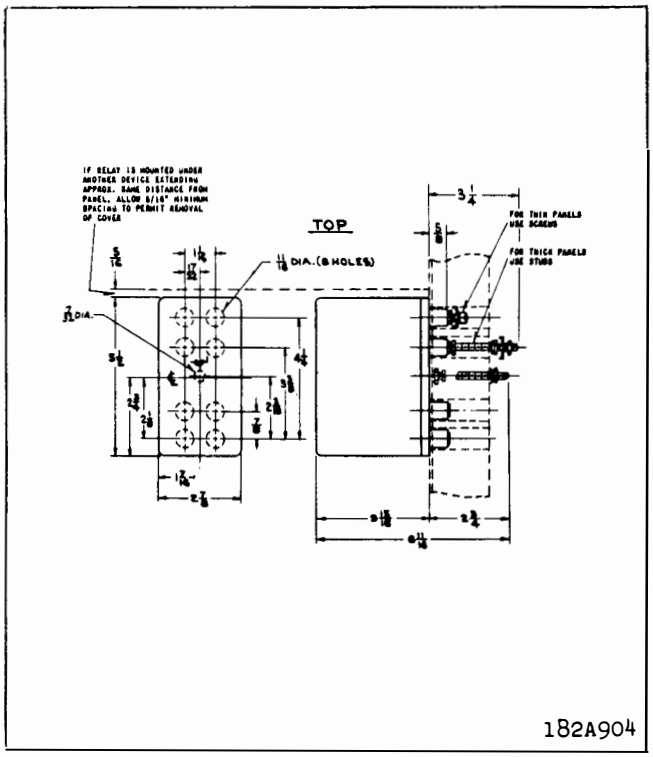

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

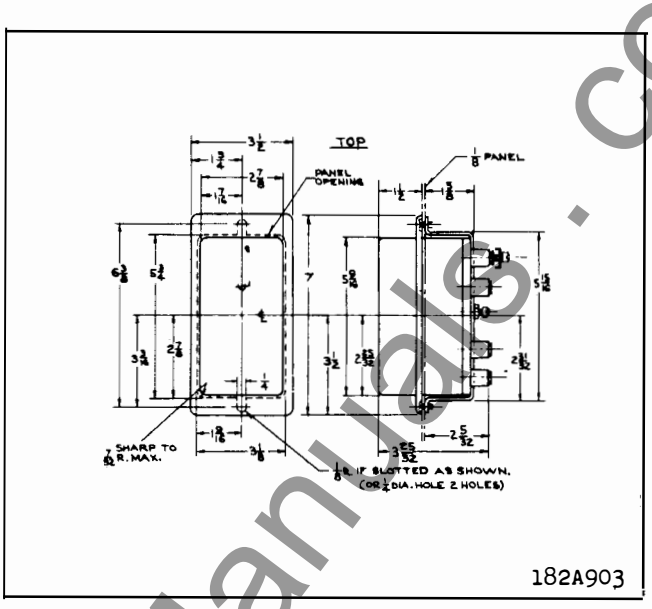

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

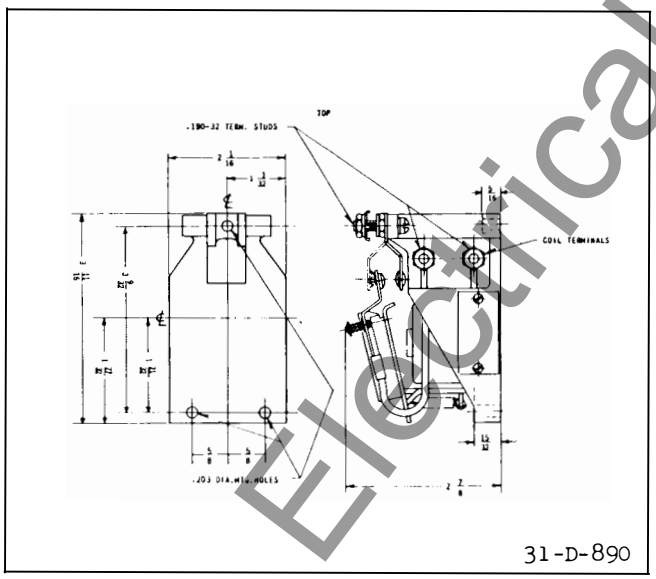

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

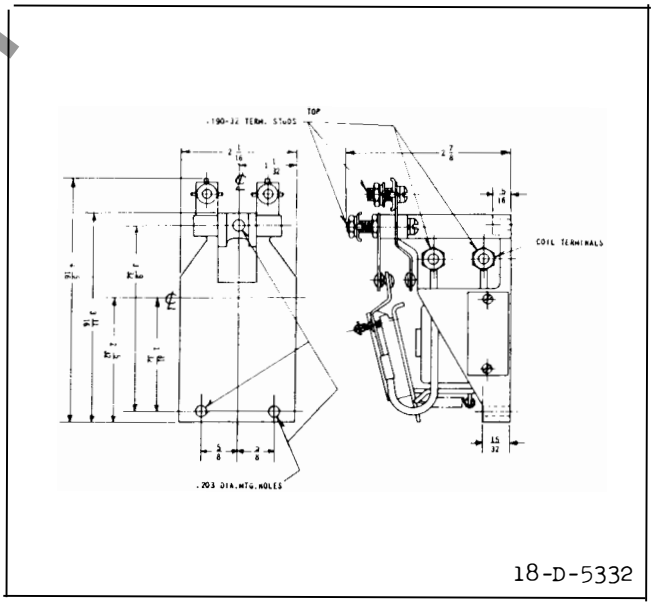

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

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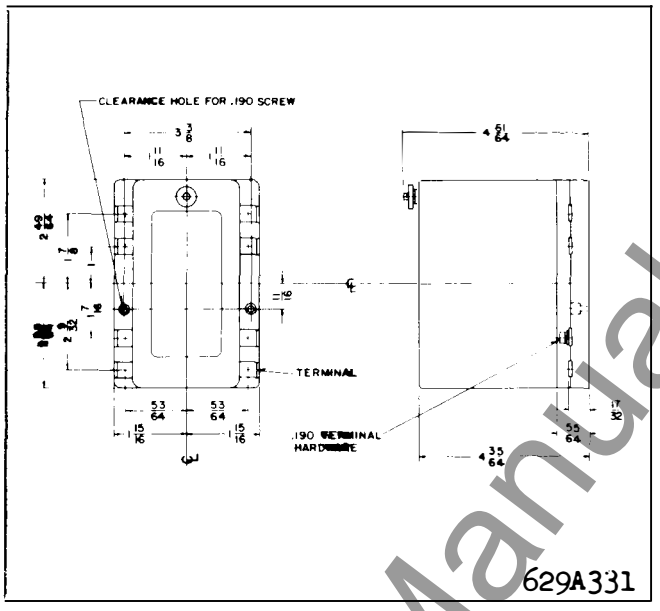

Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.

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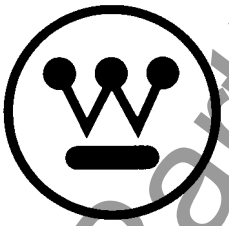

WESTINGHOUSE ELECTRIC CORPORATION

RELAY-INSTRUMENT DIVISION **NEWARK, N. J.**

Printed in U.S.A.

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

CAUTION: Before putting protective relays into service, remove all blocking which may have been inserted for the purpose of securing the parts during shipment, make sure that all moving parts operate freely, inspect the contacts to see that they are clean and close properly, and operate the relay to check the settings and electrical connections.

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

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 dc

115 and 230 Volts - 25 hertz

115, 230, 440 and 575-50 or 60 hertz

and for higher dc or 25 hertz 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.

CONSTRUCTION & OPERATION

The SG relays are clapper-type devices designed to operate over a wide range of ac and dc voltages. When their coils are energized at or above pickup rating, the moving contacts on the armature assembly, close and/or open with the two stationary contacts to activate the electrically independent contact circuits.

Closed types are supplied with two make and two break contacts. Open types (front connected) can be supplied with two make and two break contacts, or with only the two make contacts which can be reversed to provide one make, one break, or two break contact circuits. Contact gap and follow should be readjusted per Table 1 after contacts have been reversed. Adjustment is accomplished by bending the stationary contacts.

Small coil springs on the moving contact arms provide adequate contact pressure to assure positive contact action between the moving and stationary contacts.

Dc types have a bronze pin on the core which serves as a stop pin for the armature, and prevents magnetic seal-in of the armature due to residual magnetism. Ac types have a non-magnetic washer at the base of the core assembly to prevent the armature from sticking in the closed-gap position. Copper shading rings are also provided on the core face of the ac types to prevent chattering of the armature.

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. 41-751K, dated January 1972

✪ **Denotes Change from superseded issue.**

EFFECTIVE AUGUST 1976

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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.

BURDEN

The closed gap volt-ampere burden at rated voltage (60 hertz) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 hertz) is 16, at the same power factor. The watt consumption at rated dc voltage is 3.5.

CONTACTS

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.

INTERRUPTING RATING IN AMPERES

Volts	dc 1 Contact	2 Contacts in Series	ac 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 dc rating
.016 – .033 sec. at ac rating

Dropout: less than .016 sec. on dc or ac

COIL DATA – DC

Rating Amps	Volts	Resistance: Ohms	1-Second Rating: Amps
1	–	2.5	35
2	–	0.7	55
3	–	0.33	85
4	–	0.2	110
5	–	0.1	185
a-c			
–	5	12	–
–	12	48	–
–	24	185	–
–	32	294	–
–	48	725	–
–	62.5	1152	–
–	125	4650	–
–	250	17000	–

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32"	3/64"
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SPDT	5/32"	3/64"
DPDT	1/8-9/64"	3/64"
Break Contact Follow		
	(1)	(2)
2M	–	–
2B	1/32-3/64"	0.020-0.031"
SPDT	3/64"	0.031"
DPDT	3/64"	0.031"

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 nameplate reading.

Relays for use on ac 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 reduce the residual magnetism after the relay is de-energized. In case the relay should be dismantled, it is important that this washer be replaced on reassembling it.

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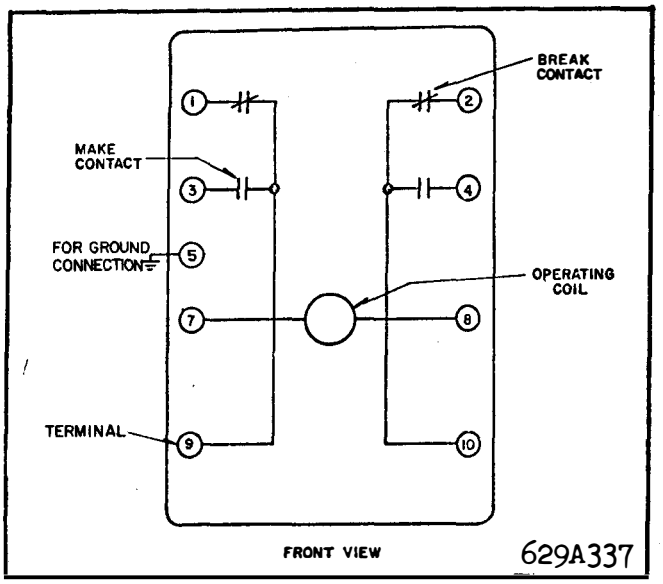

✪ *Fig. 1 Internal Schematic for Type SG relay in front connected case.*

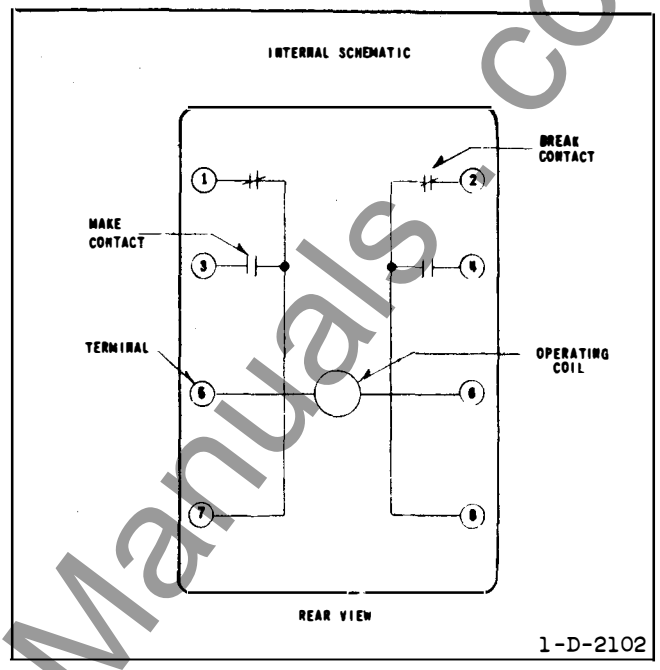

Fig. 2 Internal Connections for Closed Type SG Relay.

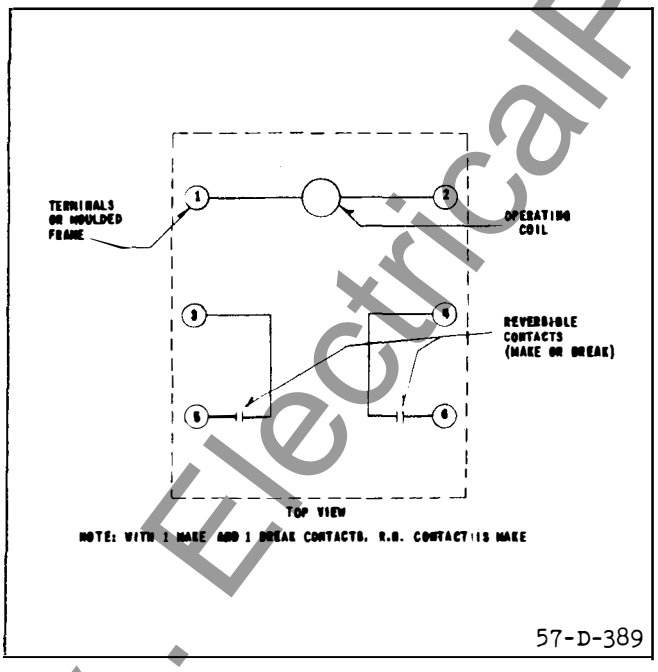

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

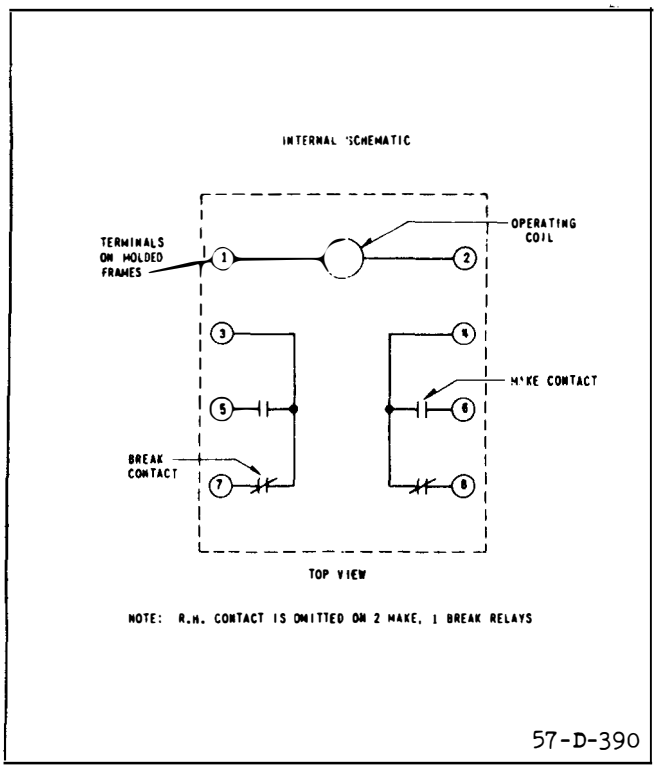

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

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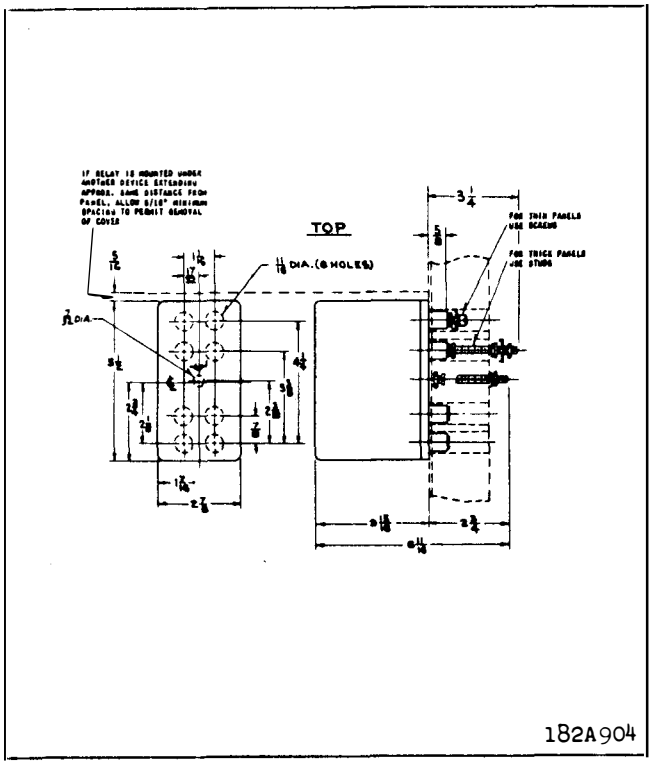

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

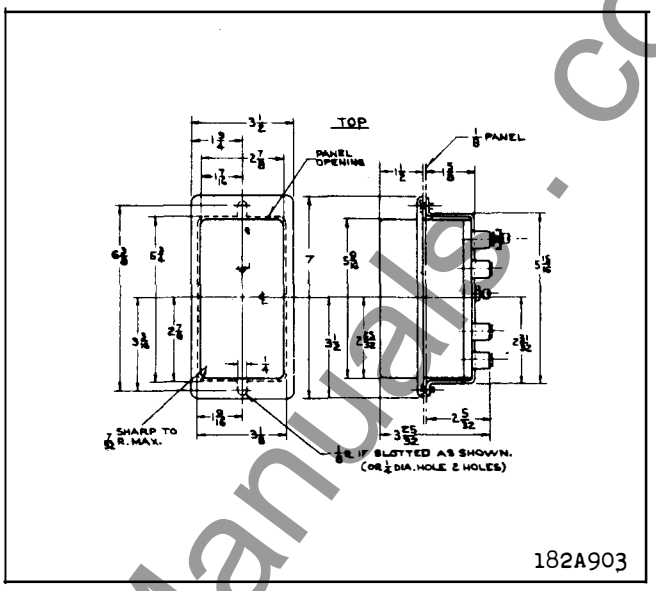

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

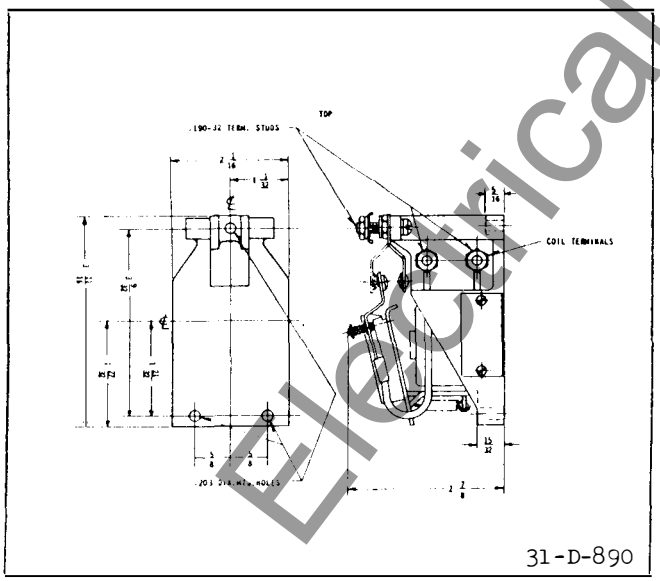

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

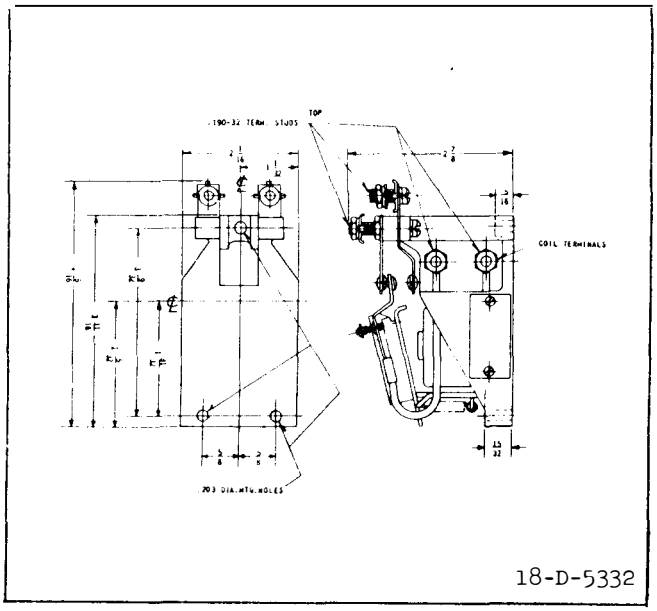

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

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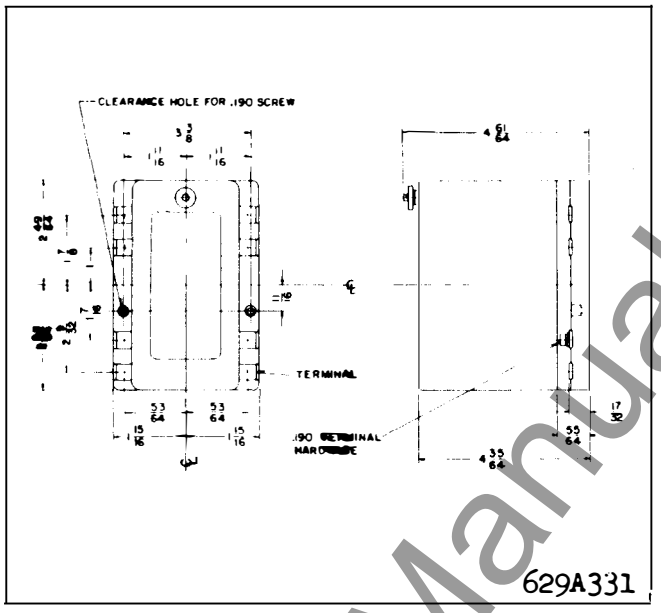

✪ *Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.*

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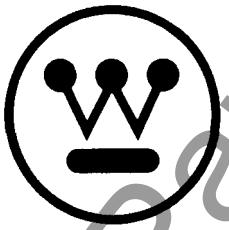

WESTINGHOUSE ELECTRIC CORPORATION

RELAY-INSTRUMENT DIVISION **CORAL SPRINGS, FL.**

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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. For further information regarding application consult Westinghouse Relay Catalog Section #41-350 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 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

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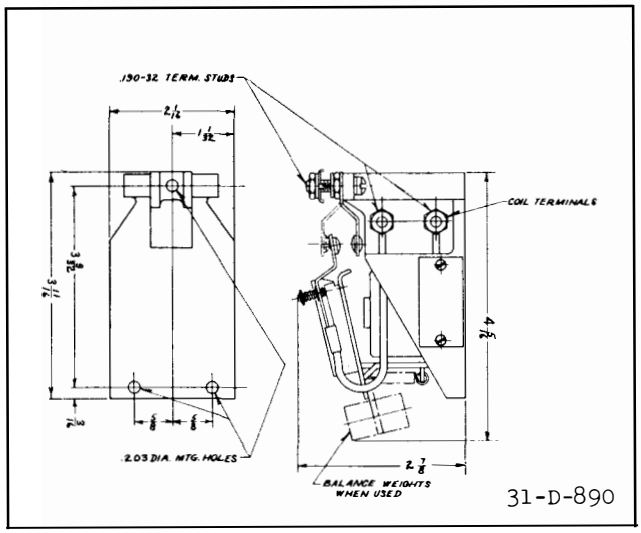

Fig. 8—Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

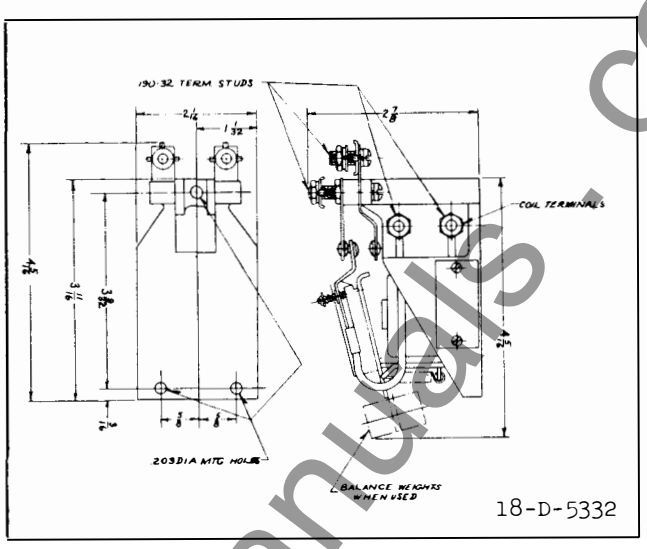

Fig. 9—Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

LATION: Before putting protective relays service, remove all blocking which may have en inserted for the purpose of securing the parts during shipment, make sure that all moving parts operate freely, inspect the contacts to see that they are clean and close properly, and operate the relay to check the settings and electrical connections.

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

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 dc

115 and 230 Volts - 25 hertz

115, 230, 440 and 575-50 or 60 hertz

and for higher dc or 25 hertz 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.

CONSTRUCTION & OPERATION

The SG relays are clapper-type devices designed to operate over a wide range of ac and dc voltages. When their coils are energized at or above pickup rating, the moving contacts on the armature assembly, close and/or open with the two stationary contacts to activate the electrically independent contact circuits.

Closed types are supplied with two make and two break contacts. Open types (front connected) can be supplied with two make and two break contacts, or with only the two make contacts which can be reversed to provide one make, one break, or two break contact circuits. Contact gap and follow should be readjusted per Table 1 after contacts have been reversed. Adjustment is accomplished by bending the stationary contacts.

Small coil springs on the moving contact arms provide adequate contact pressure to assure positive contact action between the moving and stationary contacts.

Dc types have a bronze pin on the core which serves as a stop pin for the armature, and prevents magnetic seal-in of the armature due to residual magnetism. Ac types have a non-magnetic washer at the base of the core assembly to prevent the armature from sticking in the closed-gap position. Copper shading rings are also provided on the core face of the ac types to prevent chattering of the armature.

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. 41-751K, dated January 1972

✪ Denotes Change from superseded issue.

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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.

BURDEN

The closed gap volt-ampere burden at rated voltage (60 hertz) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 hertz) is 16, at the same power factor. The watt consumption at rated dc voltage is 3.5.

CONTACTS

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.

INTERRUPTING RATING IN AMPERES

Volts	dc 1 Contact	2 Contacts in Series	ac 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 dc rating
.016 - .033 sec. at ac rating

Dropout: less than .016 sec. on dc or ac

COIL DATA - DC

Rating Amps	Volts	Resistance Ohms	1-Second Rating Amps
1	–	2.5	35
2	–	0.7	
3	–	0.33	
4	–	0.2	
5	–	0.1	18
–	a-c 5	12	–
–	12	48	–
–	24	185	–
–	32	294	–
–	48	725	–
–	62.5	1152	–
–	125	4650	–
–	250	17000	–

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENT

Contact Arrange	Contact Gap	Make-Contact Follow
2M	5/32"	3/64"
2B	5/32"	–
SPDT	5/32"	3/64"
DPDT	1/8-9/64"	3/64"
	Break Contact Follow	
	(1)	(2)
2M	–	–
2B	1/32-3/64"	0.020-0.031"
SPDT	3/64"	0.031"
DPDT	3/64"	0.031"

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 nameplate reading.

Relays for use on ac 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 reduce the residual magnetism after the relay is de-energized. In case the relay should be dismantled, it is important that this washer be replaced on reassembling it.

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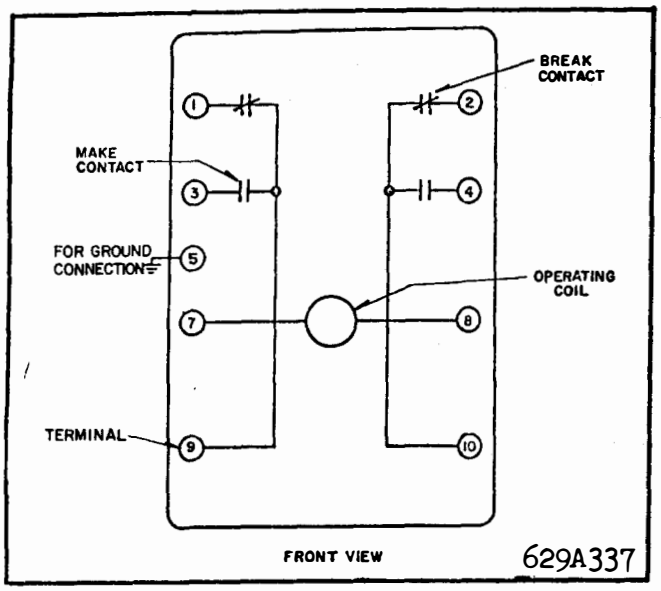

Fig. 1 Internal Schematic for Type SG relay in front connected case.

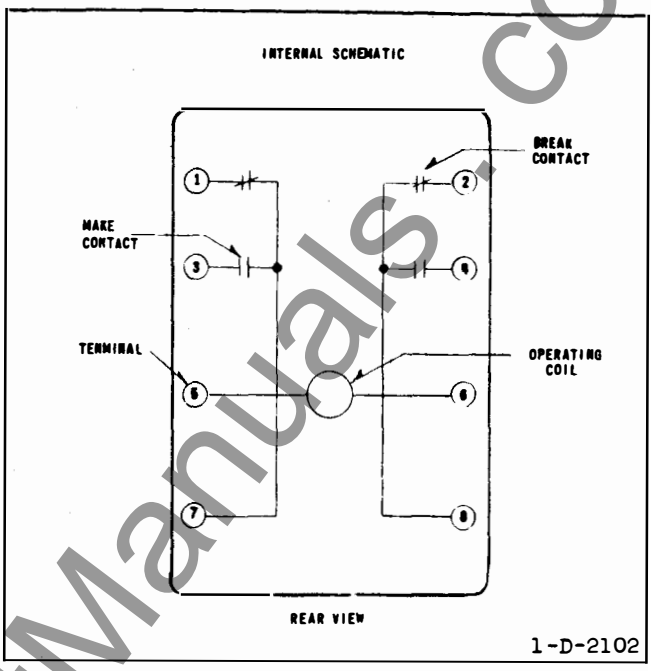

Fig. 2 Internal Connections for Closed Type SG Relay.

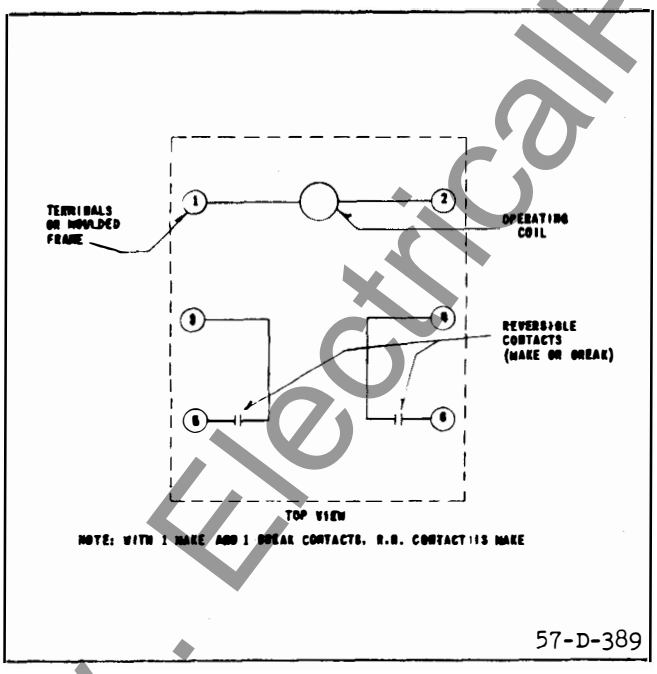

Fig. 3 Internal Connections for Open Type SG Relay with Reversible Contacts.

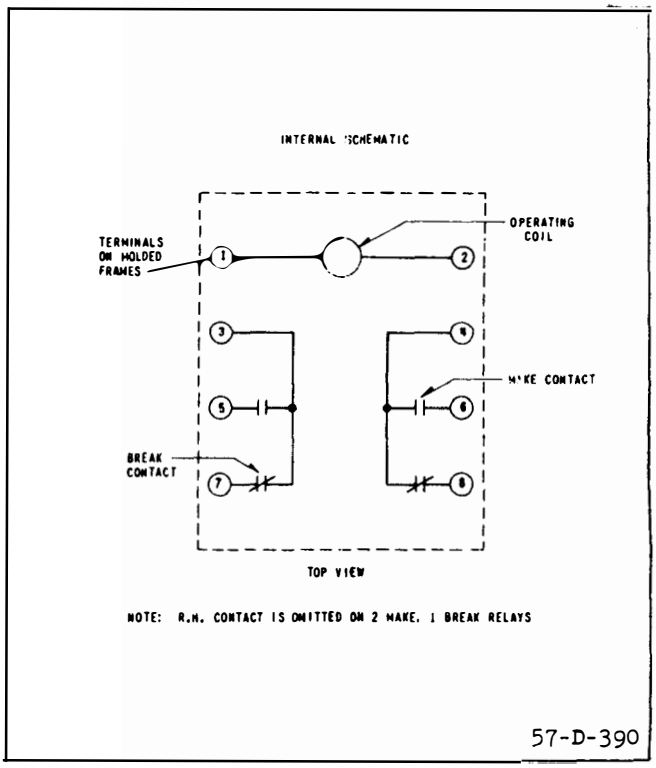

Fig. 4 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

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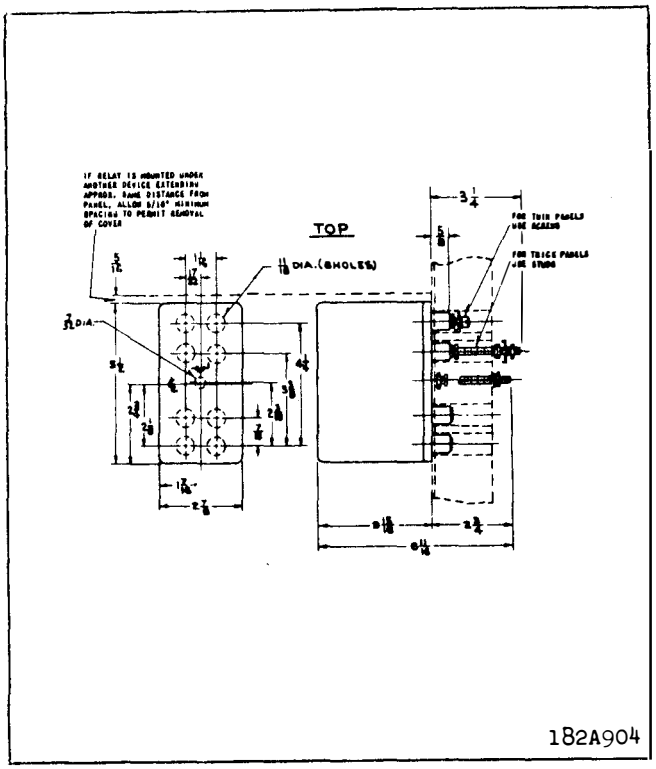

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

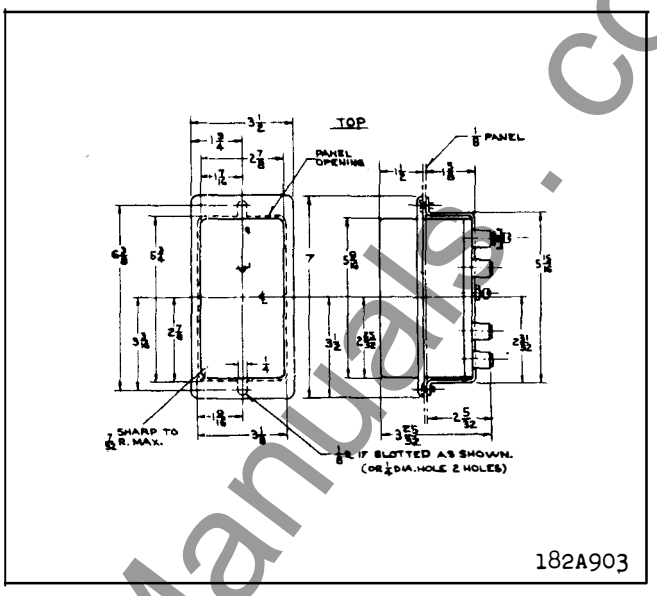

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

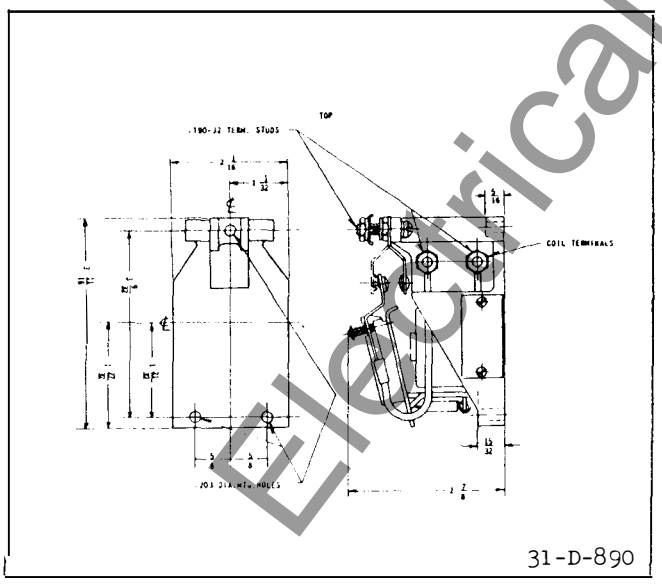

Fig. 7 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

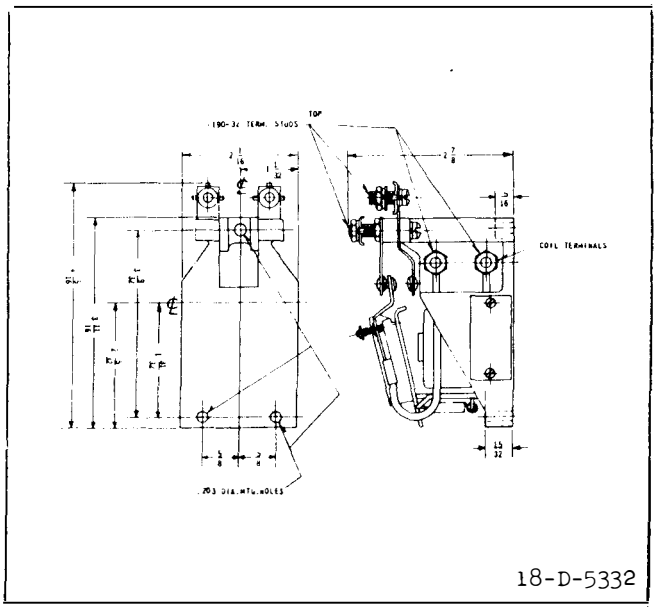

Fig. 8 Outline and Drilling Plan for the 2-make and 2-Break Contact Open Type SG Relay. For Reference Only.

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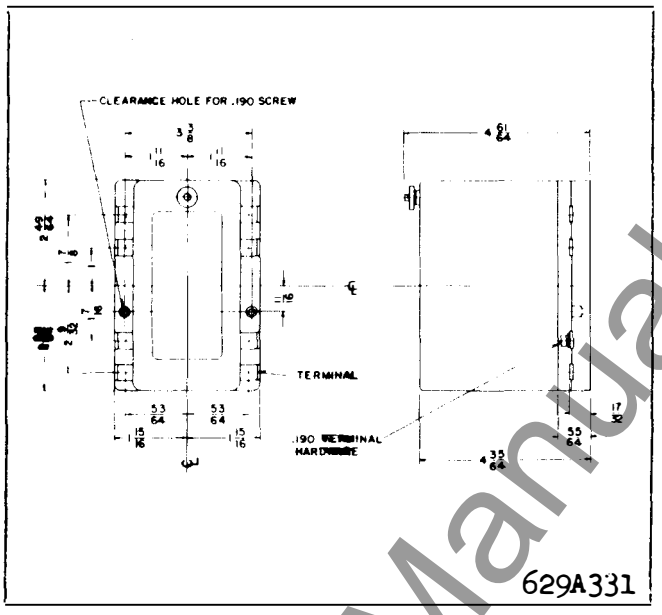

✪ *Fig. 9 Outline and Drilling Plan for the Type SG Relay in Front Connected with dust cover.*

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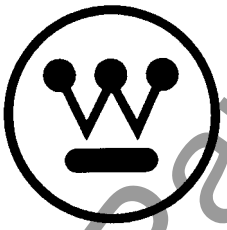

WESTINGHOUSE ELECTRIC CORPORATION

RELAY-INSTRUMENT DIVISION **CORAL SPRINGS, FL.**

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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

CAUTION: Before putting protective relays into service, remove all blocking which may have been inserted for the purpose of securing the parts during shipment, make sure that all moving parts operate freely, inspect the contacts to see that they are clean and close properly, and operate the relay to check the settings and electrical connections.

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

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 dc

115 and 230 Volts - 25 hertz

115, 230, 440 and 575-50 or 60 hertz

and for higher dc or 25 hertz 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.

CONSTRUCTION & OPERATION

The SG relays are clapper-type devices designed to operate over a wide range of ac and dc voltages. When their coils are energized at or above pickup rating, the moving contacts on the armature assembly, close and/or open with the two stationary contacts to activate the electrically independent contact circuits.

Closed types are supplied with two make and two break contacts. Open types (front connected) can be supplied with two make and two break contacts, or with only the two make contacts which can be reversed to provide one make, one break, or two break contact circuits. Contact gap and follow should be readjusted per Table 1 after contacts have been reversed. Adjustment is accomplished by bending the stationary contacts.

Small coil springs on the moving contact arms provide adequate contact pressure to assure positive contact action between the moving and stationary contacts.

Dc types have a bronze pin on the core which serves as a stop pin for the armature, and prevents magnetic seal-in of the armature due to residual magnetism. Ac types have a non-magnetic washer at the base of the core assembly to prevent the armature from sticking in the closed-gap position. Copper shading rings are also provided on the core face of the ac types to prevent chattering of the armature.

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.

BURDEN

The closed gap volt-ampere burden at rated voltage (60 hertz) is 10, at a power-factor of approximately 50%. The open gap volt-ampere burden at rated voltage (60 hertz) is 16, at the same power factor. The watt consumption at rated dc voltage is 3.5.

SUPERSEDES I.L. 41-751K, dated January 1972

✪ Denotes Change from superseded issue.

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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 575-50 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751C
*Denotes change from superseded Issue

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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 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

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 nameplate reading.

*

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make - Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
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.

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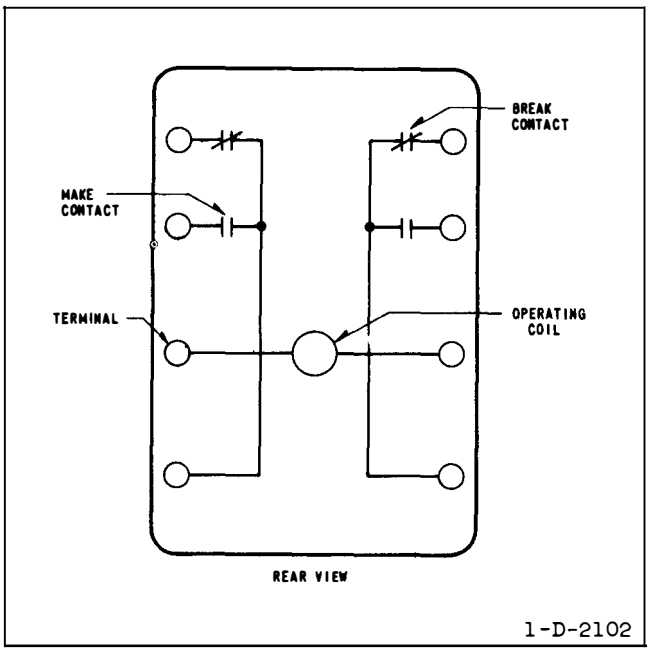

Fig. 1 Internal Connections for Closed Type SG Relay.

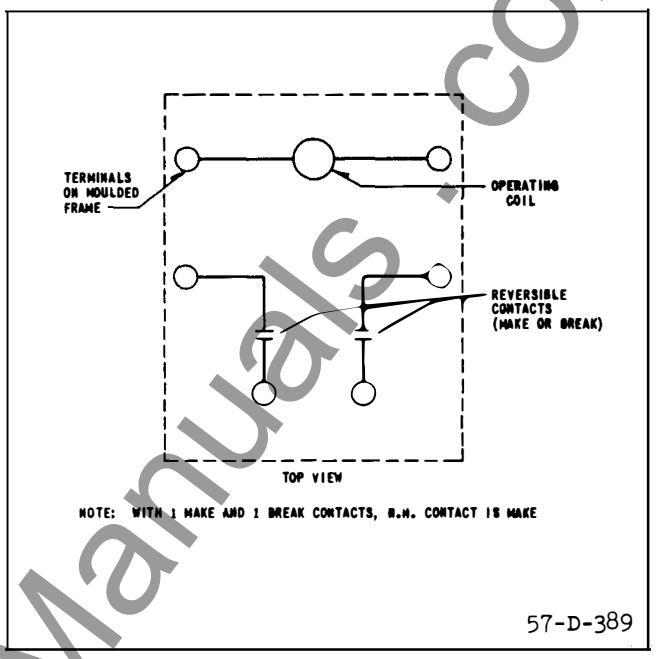

Fig. 2 Internal Connections for Open Type SG Relay with Reversible Contacts.

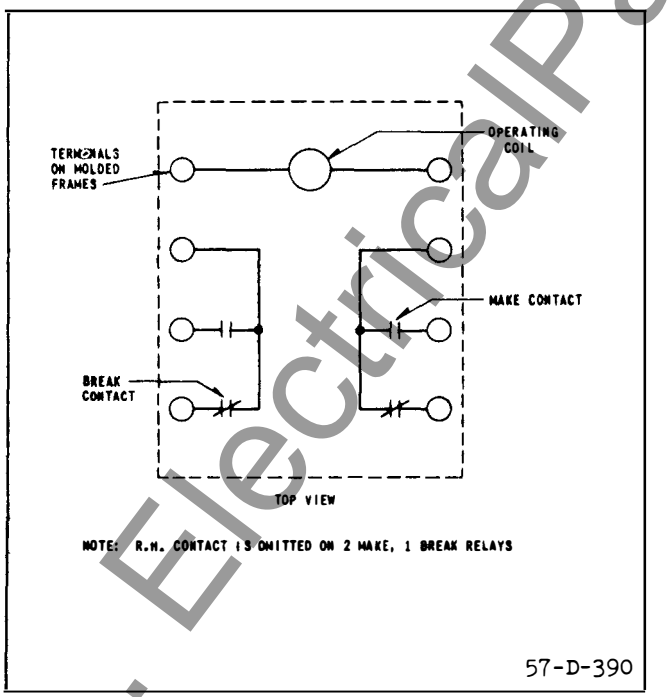

Fig. 3 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

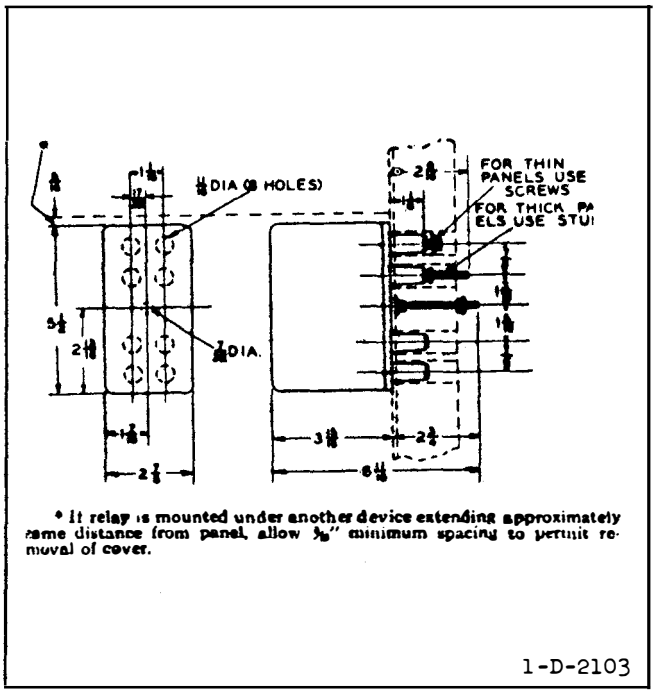

Fig. 4 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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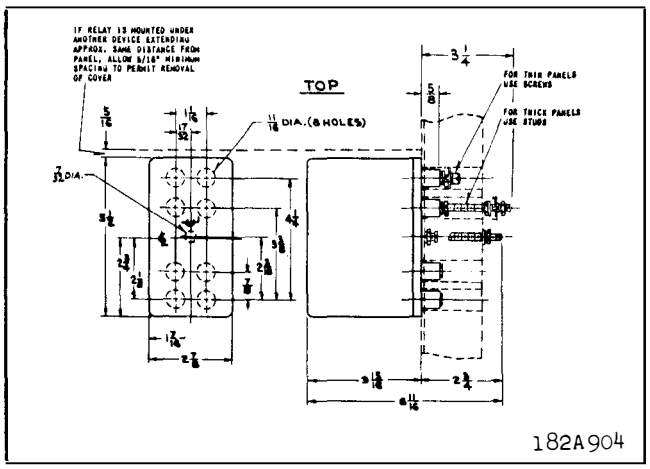

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

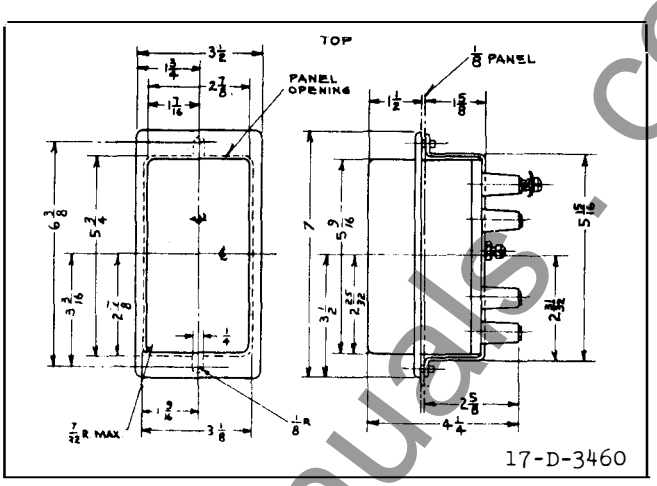

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

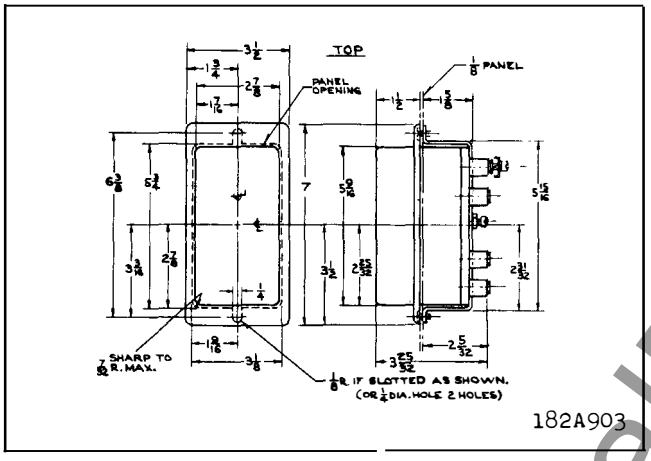

Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

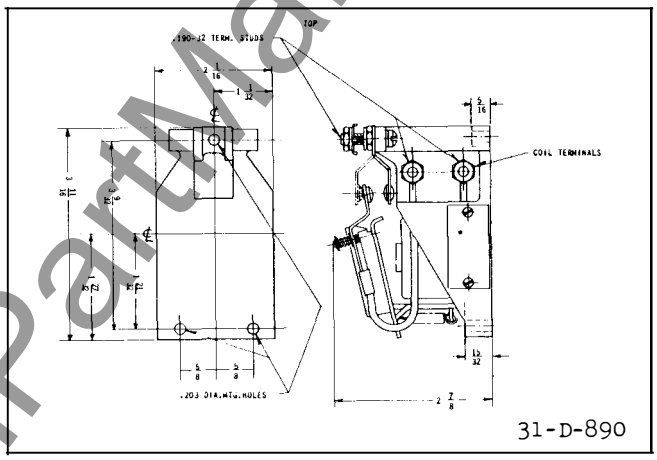

Fig. 8 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

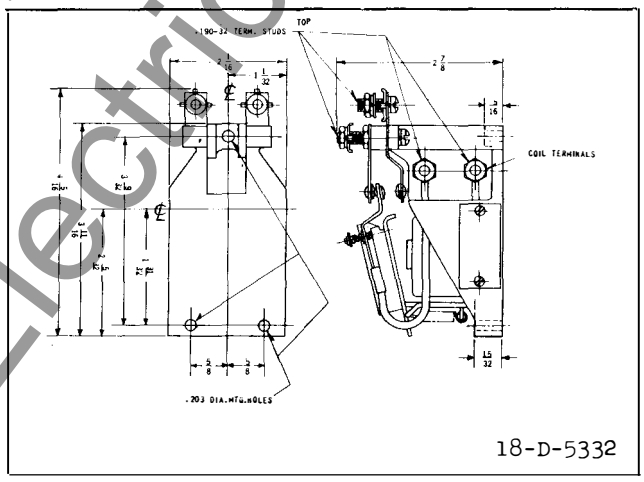

Fig. 9 Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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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 575-50 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751C
*Denotes change from superseded Issue

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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 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

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 nameplate reading.

*

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENTS

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2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
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.

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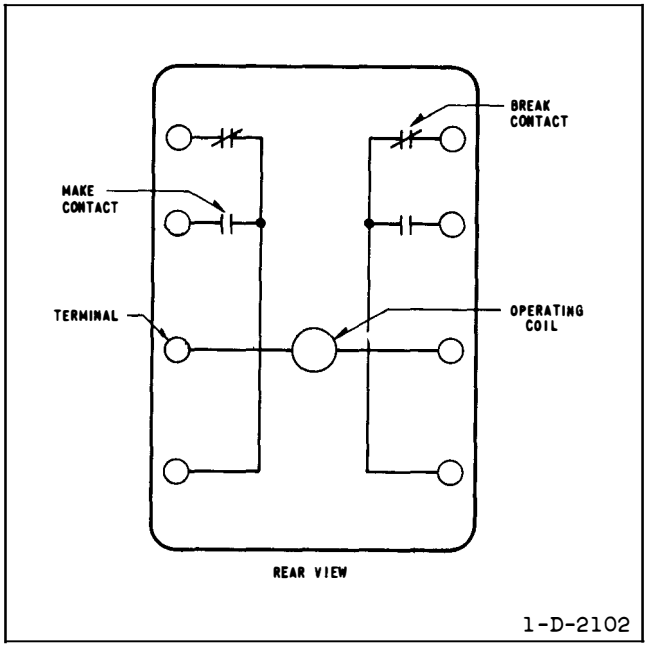

Fig. 1 Internal Connections for Closed Type SG Relay.

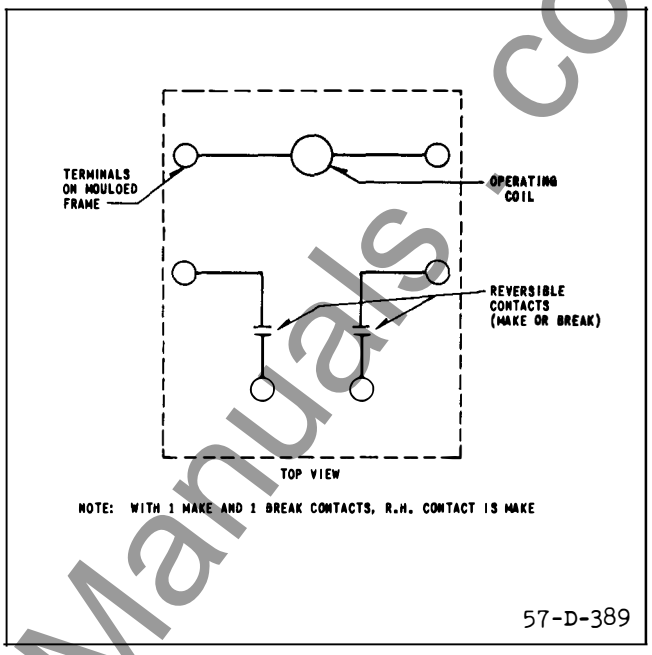

Fig. 2 Internal Connections for Open Type SG Relay with Reversible Contacts.

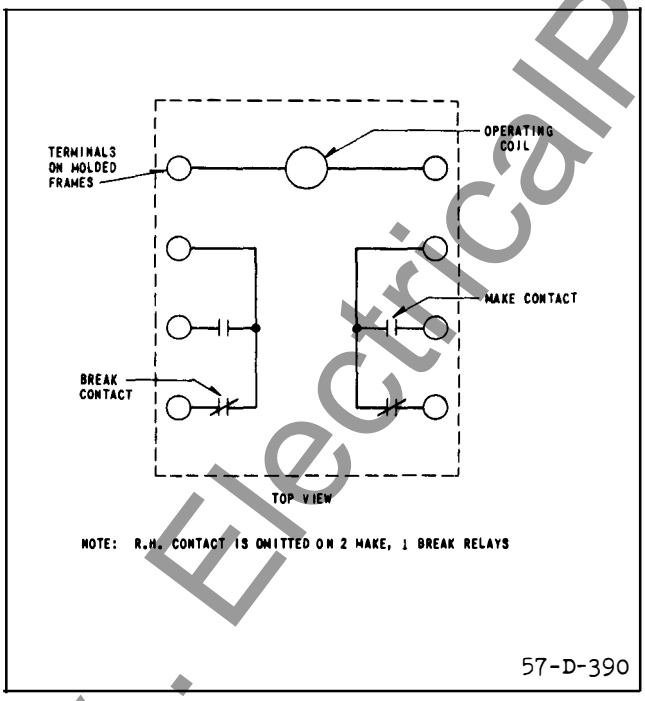

Fig. 3 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

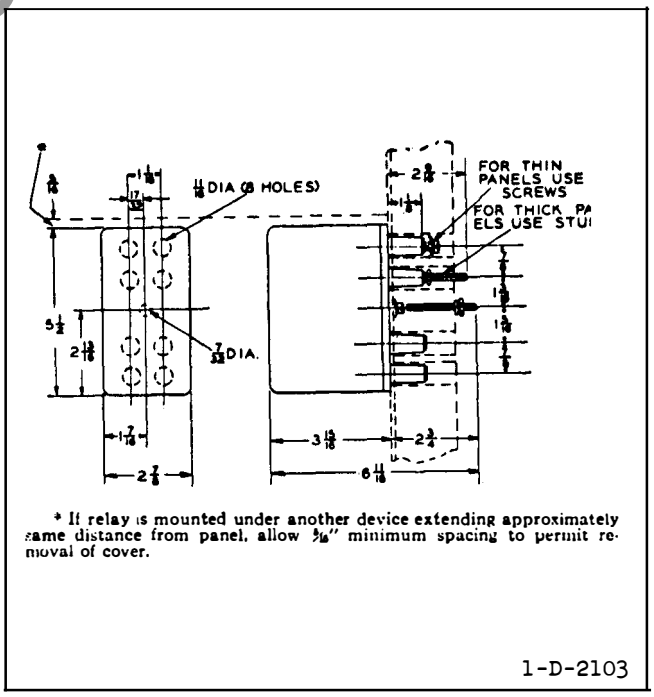

Fig. 4 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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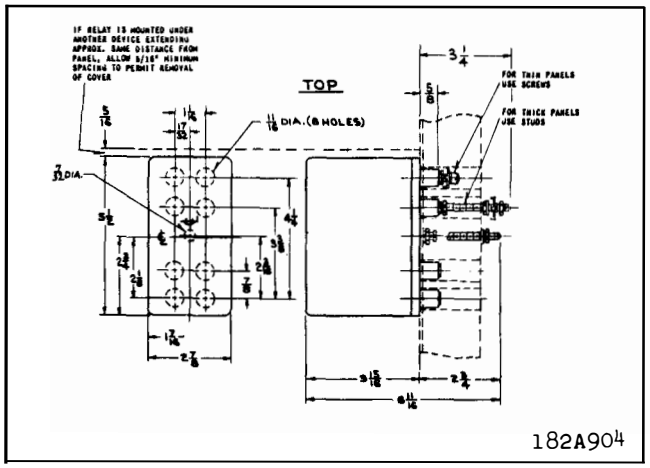

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

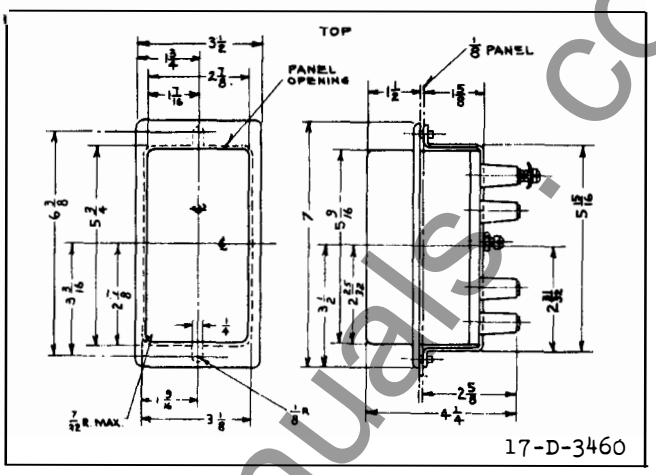

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

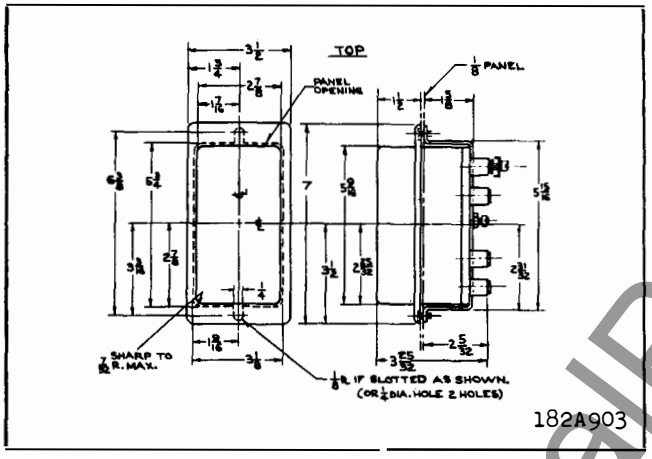

Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

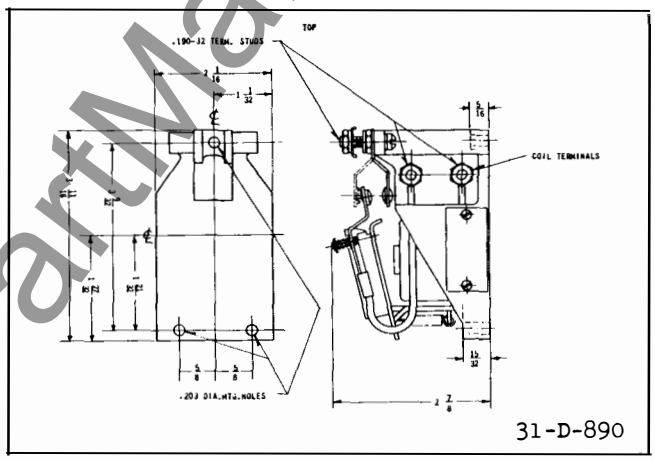

Fig. 8 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

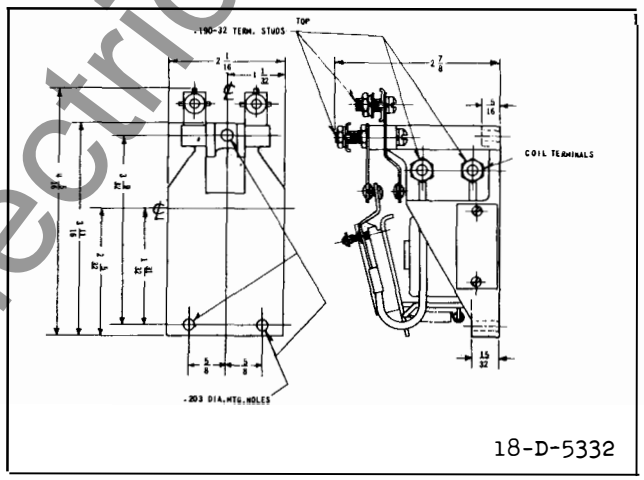

Fig. 9 Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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

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- 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. See Table I for proper contact adjustment. 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.

SUPERSEDES I.L. 41-751C
*Denotes change from superseded Issue

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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 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	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 nameplate reading.

TABLE I

CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make - Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
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.

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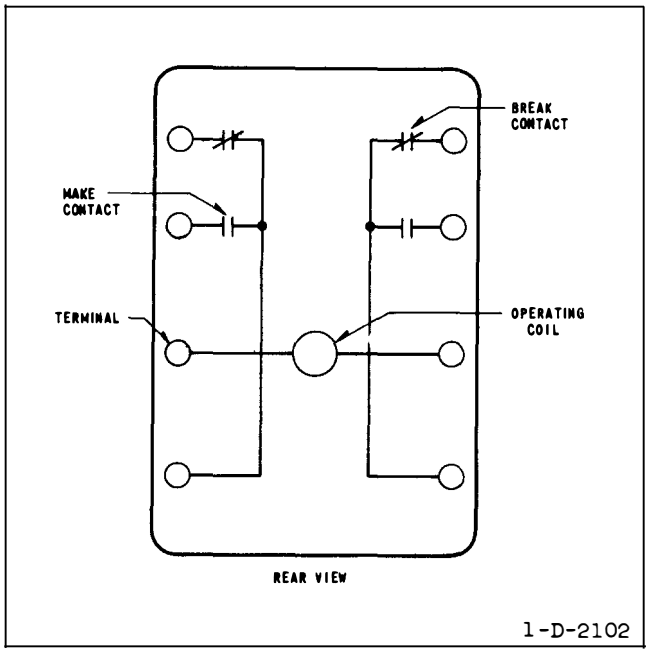


Fig. 1 Internal Connections for Closed Type SG Relay.

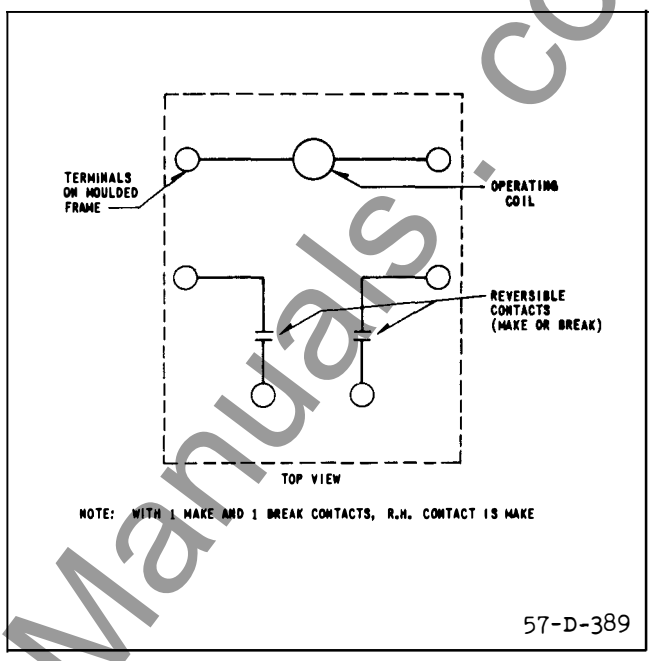


Fig. 2 Internal Connections for Open Type SG Relay with Reversible Contacts.

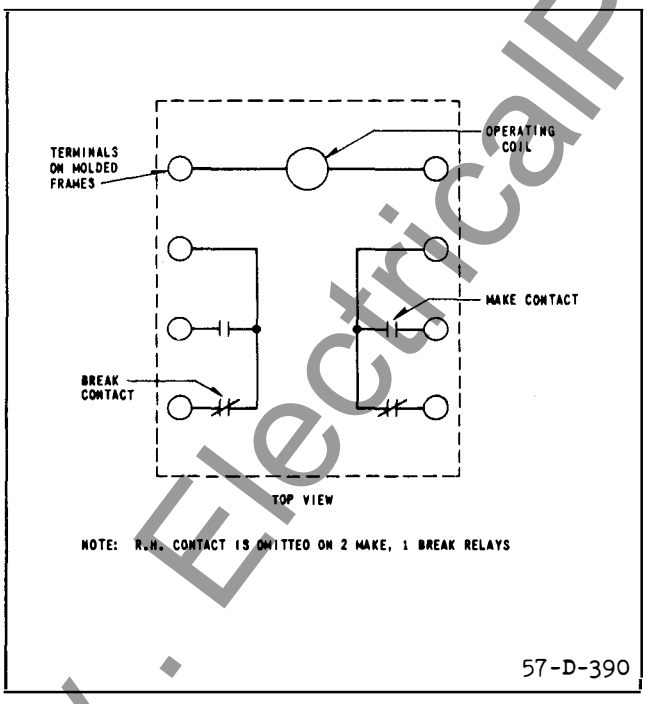
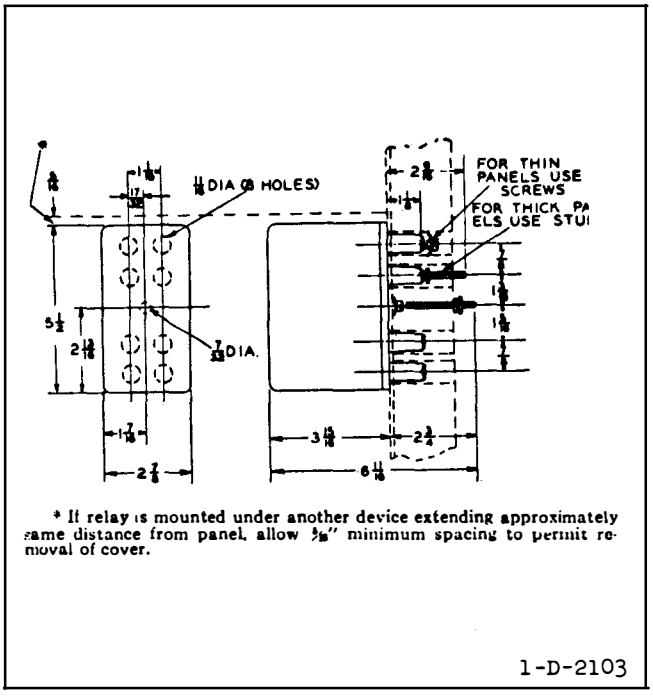


Fig. 3 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.



* If relay is mounted under another device extending approximately same distance from panel, allow ⅜" minimum spacing to permit removal of cover.

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

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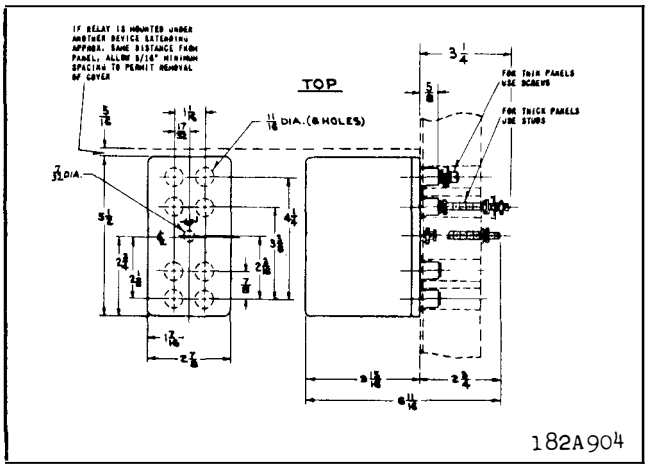


Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

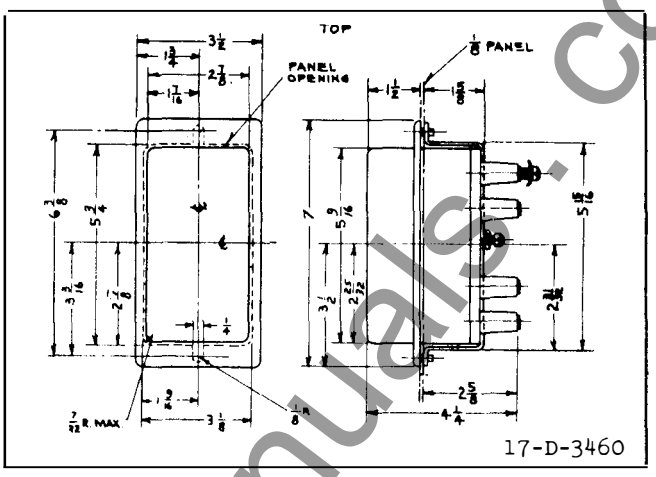


Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

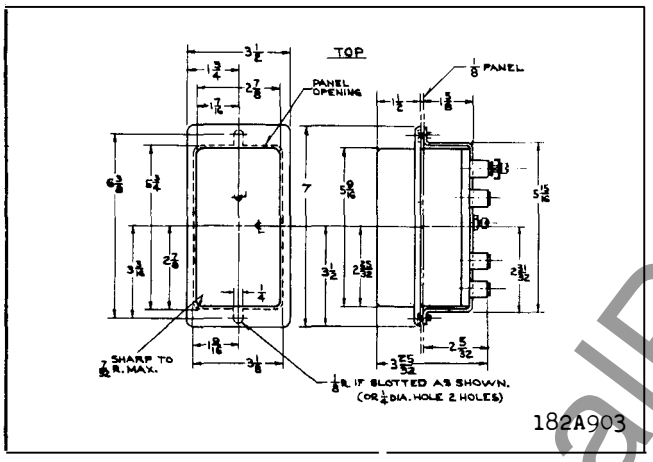


Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

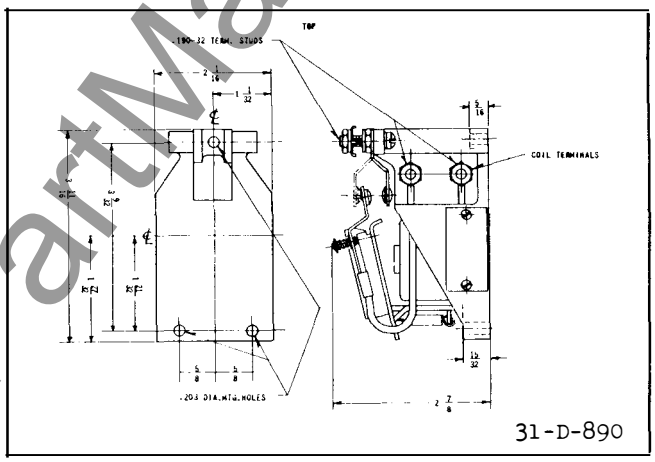
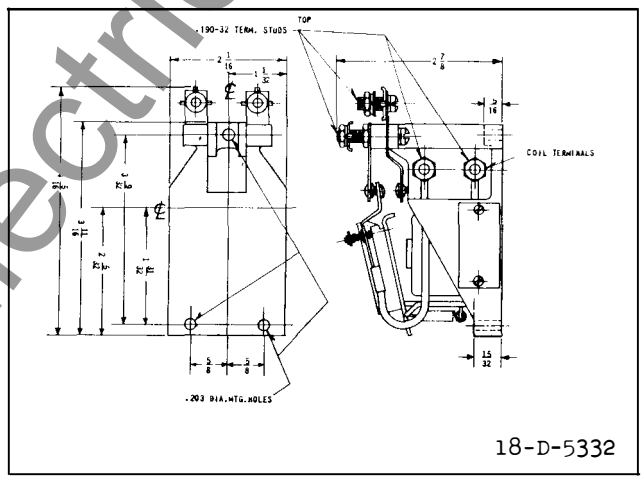


Fig. 8 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.



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INSTALLATION • OPERATION • MAINTENANCE

INSTRUCTIONS

TYPE SG AUXILIARY RELAY

INSTALLATION

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

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APPLICATION

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115 and 230 Volts - 25 Cycles
115, 230, 440 and 575- 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.

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SUPERSEDES I.L. 41-751C
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CONTACT GAP AND FOLLOW ADJUSTMENTS

Contact Arrange.	Contact Gap	Make - Contact Follow	Break-Contact Follow (1)	Break-Contact Follow (2)
2M	5/32''	3/64''	—	—
2B	5/32''	—	1/32 - 3/64''	0.020-0.031''
SPDT	5/32''	3/64''	3/64''	0.031''
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.

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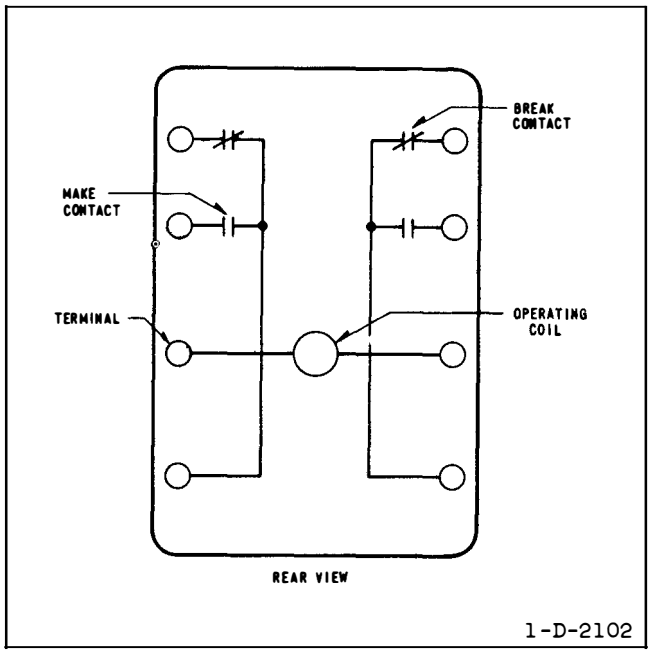

Fig. 1 Internal Connections for Closed Type SG Relay.

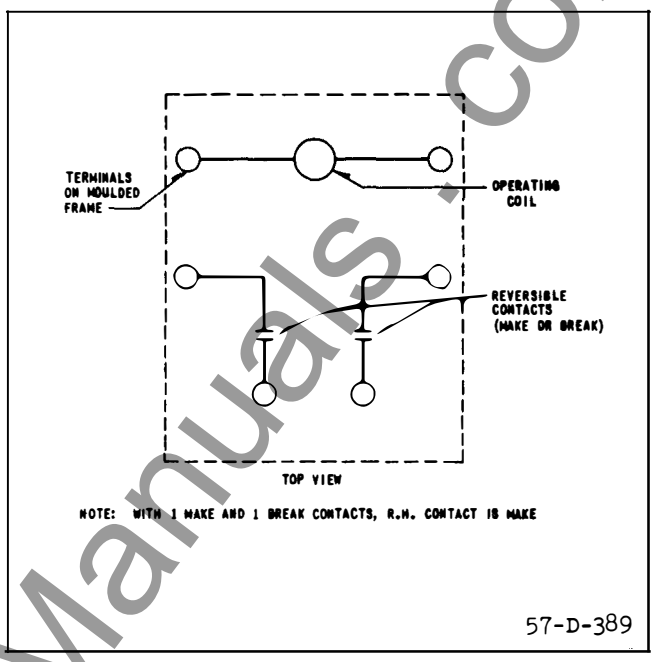

Fig. 2 Internal Connections for Open Type SG Relay with Reversible Contacts.

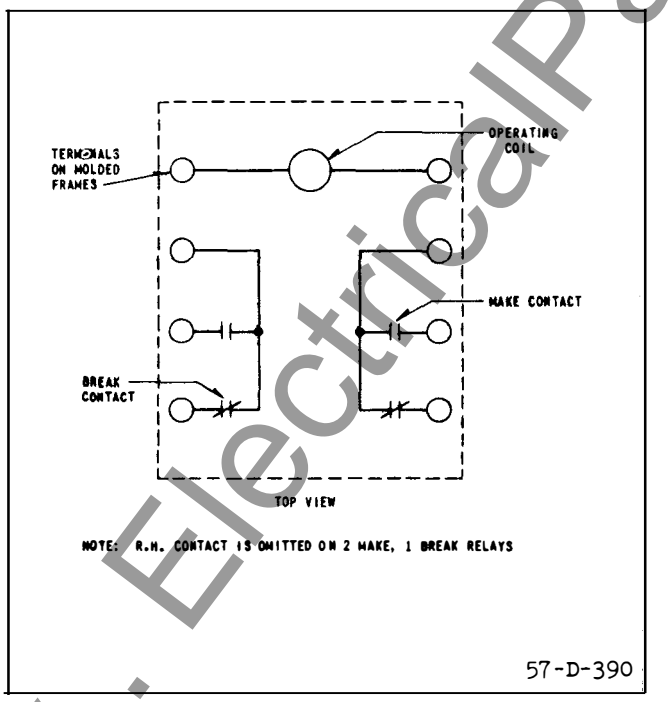

Fig. 3 Internal Connections for 2-Make and 2-Break Contact Open Type SG Relay.

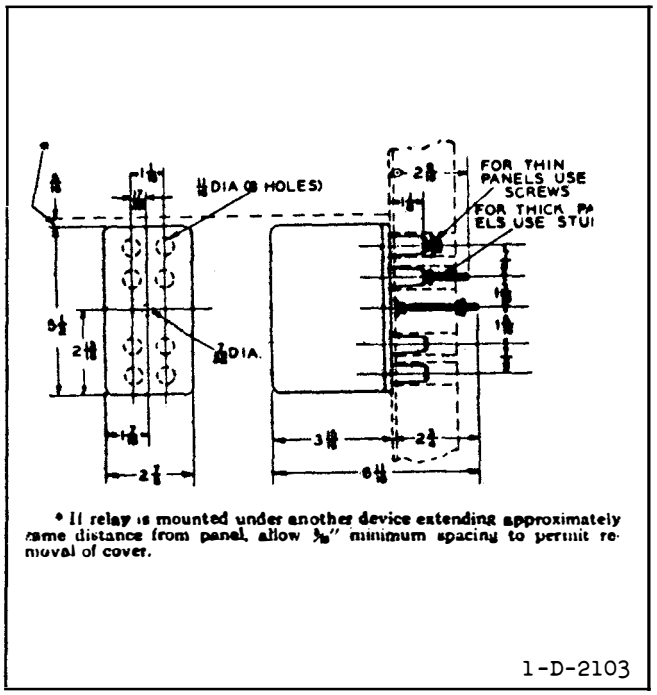

Fig. 4 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay. For Reference Only.

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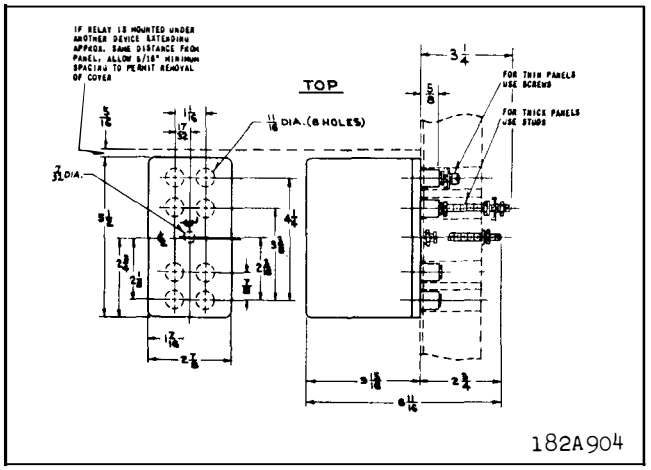

Fig. 5 Outline and Drilling Plan for the Closed Type SG Auxiliary Relay with 5/8 inch terminal studs. For Reference Only.

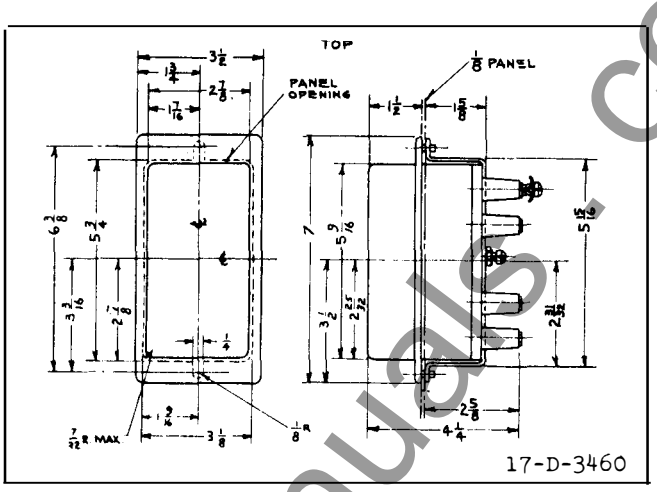

Fig. 6 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay. For Reference Only.

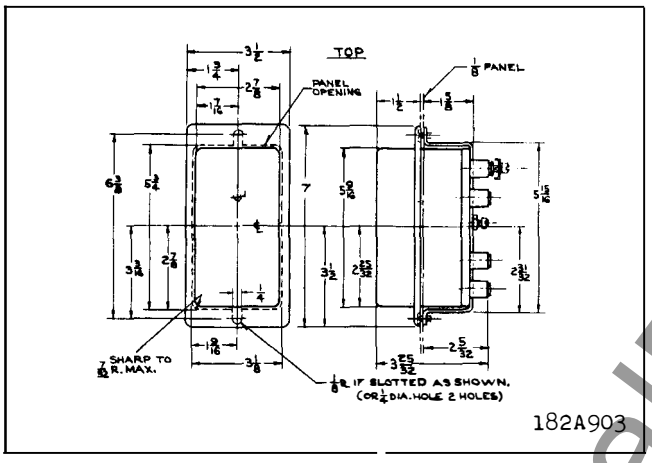

Fig. 7 Outline and Drilling Plan for the Semi-flush Case for the Type SG Relay with 5/8 inch terminal studs. For Reference Only.

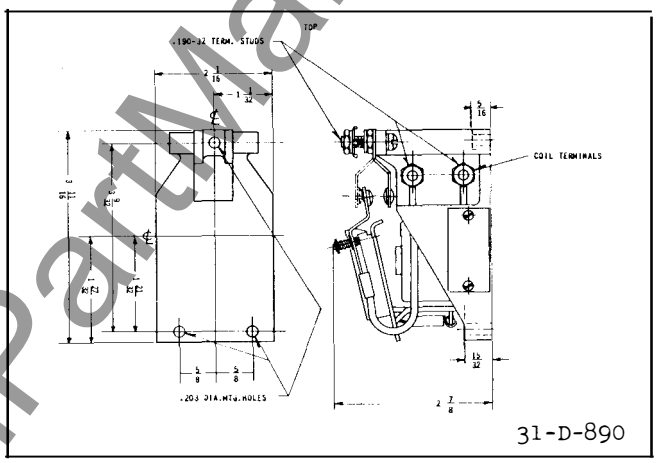

Fig. 8 Outline and Drilling Plan for the Open Type SG Auxiliary Relay with Reversible Contacts. For Reference Only.

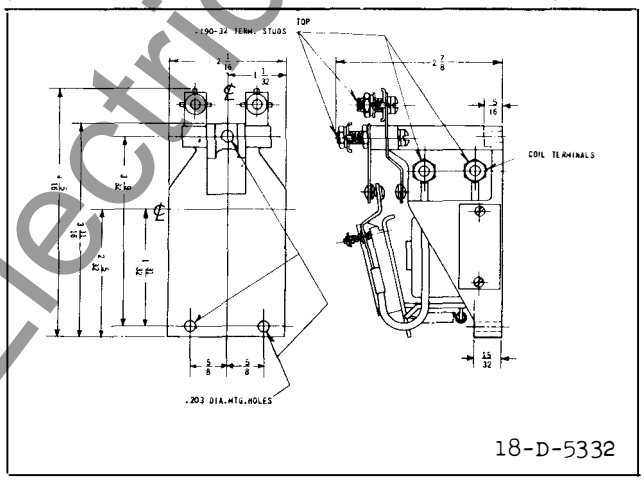

Fig. 9 Outline and Drilling Plan for the 2-Make and 2-Break Contact Open Type SG Relay. For Reference Only.

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