

MEASUREMENT OF TIMING INTERVALS  
USING THE S1 TIMER

1. GENERAL

1.01 This section covers a procedure for the measurement of timing intervals with the Standard Electric Time Co. S1 timer where the timing intervals are specified on the circuit drawing or circuit requirement table.

1.02 The S1 timer operates on 110 volts a-c. This section is arranged for those offices where the 110 volt a-c supply is available and also where the only convenient a-c supply is 220 volts.

2. APPARATUS

2.01 One W2W cord, 10 feet long, equipped with one No. 310 plug, one No. 360B tool and one No. 360C tool (2W17C cord) and two No. 364 tools. (Required only when the connections to the circuit under test terminate at a jack).

2.02 Two No. 893 cords, 6 feet long, each equipped with two No. 360A tools (1W13R cord) and two No. 364 tools. (Required only when the connections to the circuit under test do not terminate at a jack).

2.03 Standard Electric Time Co. S1 timer for 25 cycle operation and 45 volt d-c clutch operation.

2.04 Standard Electric Time Co. S1 timer for 50 cycle operation and 45 volt d-c clutch operation.

2.05 Standard Electric Time Co. S1 timer for 60 cycle operation and 45 volt d-c clutch operation.

2.06 D-161251 transformer (required only where the only a-c supply is 220 volts).

3. PREPARATION

Offices Provided with 110 Volt A-C Supply

3.01 Block or insulate any contacts as indicated on the circuit drawing or circuit requirement table.

3.02 Insert the plug attached to the timer into the 110 volt a-c supply.

3.03 Connect the terminals marked d-c (clutch) of the timer to the circuit under test as specified on the circuit drawing or circuit requirement table.

If the circuit under test terminates at the tip and ring of a jack, use the W2W cord. If the circuit does not terminate at a jack use two No. 893 cords.

Offices Where the 220 Volt A-C Supply for Frame Motors is the Only Convenient A-C Supply

3.04 Block or insulate any contacts as indicated on the circuit drawing or circuit requirement table.

3.05 Determine that the fuse through which the d-c supply for the nearby frame motor is provided, is not operated and if necessary replace this fuse.

3.06 Remove the plug which is connected to the motor a-c supply and observe that the motor continues to run. There will be a slight scraping noise as the motor shifts to the d-c supply.

3.07 Insert the plug attached to the S1 timer into the socket of the D-161251 transformer.

3.08 Insert the plug attached to the transformer into the motor a-c supply.

3.09 Connect the terminals marked d-c (clutch) of the timer to the circuit under test as specified on the circuit drawing or circuit requirement table. If the circuit under test terminates at the tip and ring of a jack, use the W2W cord. If the circuit does not terminate at a jack, use two No. 893 cords.

4. METHOD

4.01 Check that the hands of the timer are set at zero and if not, manually operate the reset lever on the front of the timer.

4.02 Start the circuit for the measurement of the time intervals as specified on the circuit drawing or circuit requirement table. If the timer does not start to function after following the procedure as indicated on the circuit drawing or circuit requirement table check all connections.

4.03 The reading on the timer indicates the timing interval.

4.04 The timing interval should be within the limits specified on the circuit drawing or circuit requirement table. If the requirements are not met, it usually indicates that the relays in the circuit under test require readjustment. In some circuits adjustable capacities or biasing resistances are provided for meeting the timing interval requirements. In these circuits if the relays are within requirements and if the timing interval requirement is not met, it may indicate that the network of the circuit should be regulated. If the timing interval requirements cannot be met by adjusting the

relays or by regulating the capacities or resistances of the network it is an indication of defective apparatus.

4.05 Remove all the connections and reinsert the frame motor plug into the motor a-c supply if it had been removed.

4.06 Manually operate the reset lever on the front of the timer.

#### 5. REPORTS

5.01 The required record of these measurements should be entered on the proper form.

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