

This appendix was prepared from Issue 22 of Drawing ES-226349.

#### METHOD OF OPERATION

Panel System - Motor Stop and Frame Busy Circuits - For Use With Main and Floor - Alarm Boards

6. In title change "(Figs 2 & 8)" to read "(Figs 2, 8 & 9)". Change last sentence in paragraph to read, "They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB, or when a make busy plug is inserted in jack (FB)."
7. In title change "(Figs 3 & 8)" to read "(Figs 3, 8 & 9)". Change last sentence in paragraph to read, "They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB, or when a make busy plug is inserted in jack (FB)."
10. In title change "(Figs 6 & 8)" to read "(Figs 6, 8 & 9)". Change last sentence in paragraph to read, "They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB, or when a make busy plug is inserted in jack (FB)."
12. Change to read as follows:-
12. DECODER CODE CONNECTOR RELAY (FIGS 8 & 9).

When the motor of an associated sender frame slows down or stops, closure of the motor stop contact operates relay (D), which operates the frame busy relays to make busy all senders driven by the motor. When a decoder connector becomes inoperative or a make busy plug is inserted in jack FB, ground is connected to the FB leads of the associated sender frames, operating the corresponding frame busy relays to make busy the senders served by the connector.

13. Add paragraph 13 which reads as follows:-
13. SENDER FRAME MAKE BUSY JACK (FIG 9).

When a make busy plug is inserted in jack (FB) ground on lead E operates the frame busy relays to make busy all senders associated with one decoder connector circuit.

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This Method of Operation was prepared from Issue 21-D of Drawing ES-226349

#### METHOD OF OPERATION

Motor Stop and Frame Busy Circuit - for use with Main and Floor Alarm  
Boards - Panel System

#### DEVELOPMENT

##### 1. PURPOSE OF CIRCUIT

- 1.1 To produce an alarm when a frame drive motor stops, and to make busy all affected selectors or senders.

##### 2. WORKING LIMITS

- 2.1 None

#### OPERATION

##### 3. PRINCIPAL FUNCTIONS

- 3.1 To operate alarms when a frame motor slows down to less than normal speed.
- 3.2 To make affected circuits busy when motor speed is less than normal.

##### 4. CONNECTING CIRCUITS

- 4.1 District selector circuits
- 4.2 "A" sender circuits
- 4.3 Suburban sender circuits
- 4.4 "B" sender circuits
- 4.5 Local tandem sender circuits
- 4.6 Panel line finder circuits
- 4.7 Miscellaneous Alarm circuit
- 4.8 Decoder connector circuit



#### DESCRIPTION OF OPERATION

##### 5. DISTRICT MOTOR STOP AND FRAME BUSY (FIG. 1)

Operation of the (FB) relays disconnects battery from the test leads to the line switches and connects ground to the test leads as a busy condition. Operation of key (MS) lights a guard lamp at the floor alarm board and releases relay (MS), which retires the alarms. When the motor again runs at normal speed, the (FB) relays release, removing the busy condition, and relay (MS) operates, bringing in the alarms. When the (MS) key is released, the alarms are retired. Operation of key (FB) operates relay (FB) to make the associated districts busy.

##### 6. MISCELLANEOUS FRAME MOTOR STOP AND FRAME BUSY (FIGS. 2 & 8)

Operation of relay (FB) or relays (FB1) and (FB2) makes busy all circuits affected by the stopping of the motor. Operation of key (MS) lights the guard lamp and releases relay (MS), which retires the alarms. When the motor again runs at normal speed, the (FB) or (FB1) and (FB2) relays release, removing the busy condition, and relay (MS) operates, bringing in the alarms. When the (MS) key is released, the alarms are retired. When Fig. 8 is furnished, operation of relay (D) operates the associated sender frame busy relays. They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB.

##### 7. "B" SENDER AND LOCAL TANDEM SENDER MOTOR STOP AND FRAME BUSY (FIGS. 3 & 8)

Operation of the (SB) and (SB-1) relays, X wiring, connects ground to the sender leads. Operation of relay (SB), Y wiring, connects ground to the (PB) relays and to the (MB) jacks of the senders. Operation of relay (SB), Z wiring, connects ground to the leads to the senders. Operation of key (MS) lights the guard lamp and releases relay (MS), which retires the alarms. When the motor again runs at normal speed, the (SB) and (SB1) or (PB) relays release, removing the busy condition, and relay (MS) operates, bringing in the alarms. When the (MS) key is released, the circuit returns to normal. When Fig. 8 is furnished, operation of relay (D) operates the frame busy relays. They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB.

##### 8. PANEL LINE FINDER AND DISTRICT MOTOR STOP (FIG. 4)

When the motor slows down or stops, closure of the "stop" contact operates relay (MS) and the (FB) relays. Operation of relay (MS) operates the AC auxiliary signals. Operation of the (FB) relays makes busy the associated line finders. Operation of key (MS) lights the



guard lamp and releases relay (MS), which retires the alarms. When the motor again runs at normal speed, the (FB) relays release, removing the busy condition, and relay (MS) operates, bringing in the alarms. When the (MS) key is released, the circuit returns to normal.

9. MOTOR STOP ALARM FOR PULSE MACHINES (FIG. 5)

When the pulse machine motor slows down or stops, relay (PF) operates, operating the floor alarm board DC auxiliary signal. One alarm circuit is provided for the "A" drums and one for the "B" drums. The motor stop contact of each machine is wired to terminals of the key units so that any one of the three machines can be connected to the motor stop alarm circuit for either the "A" or "B" drums.

10. MOTOR STOP AND FRAME BUSY CKT. FOR SENDER FRAMES (FIGS. 6 & 8)

When the frame motor slows down or stops, closure of the "stop" contact operates relay (MS) and the (FB) and (FB1) relays. Operation of relay (MS) operates the AC auxiliary signals. Operation of relays (FB) and (FB1) places a busy condition on the affected senders. Operation of key (MS) lights the guard lamp and releases relay (MS), which retires the alarms. When the motor again runs at normal speed, the (FB) and (FB1) relays release, removing the busy condition, and relay (MS) operates, bringing in the alarms. When the (MS) key is released, the circuit returns to normal. When Fig. 8 is furnished, operation of relay (D) operates the (FB) and (FB1) relays. They are also operated when a trouble condition in the decoder connector circuit causes ground to be connected to leads FB.

11. LINE FINDER AND DISTRICT MOTOR STOP (FIG. 7)

When sender selector type line finders are driven by a motor which also drives link type line finders, the link type motor stop circuit is used, operating relay (FB1), over lead A, to connect ground to the "MB" leads of the sender selector type line finders.

12. DECODER CONNECTOR RELAY (FIG. 8)

When the motor of an associated sender frame slows down or stops, closure of the motor stop contact operates relay (D), which operates the frame busy relays to make busy all senders on the frame. When a decoder connector becomes inoperative, ground is connected to the FB leads of the associated sender frames, operating the corresponding frame busy relays to make busy the senders served by the connector.

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