

**4**CROSSBAR SYSTEMS  
NO. 3  
ALARM TRANSFER AND RELEASE  
CIRCUIT  
PLUG-ENDED

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<u>SECTION I - GENERAL DESCRIPTION . . .</u>	1	2.01 The CSACS is a Centralized Computer System arranged to scan the alarm condition of many offices and record all pertinent data without masking. The No. 3 crossbar office provides several scan points to CSACS to indicate specific alarm conditions. One scan point is provided by this circuit, namely the TNS lead. This scan point indicates the transferred or not transferred state of the office alarms. In addition to scan points, control points are also provided to CSACS. The two control points provided by this circuit are the ES and REM leads. The ES lead allows CSACS to attempt alarm release at the end of each scan. The REM lead allows CSACS to transfer alarms to itself but not automatically.
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<u>SECTION I - GENERAL DESCRIPTION</u>		
1. <u>PURPOSE OF CIRCUIT</u>		
1.01 This circuit provides the alarm transfer and alarm release functions for offices arranged for operation with the Centralized Status, Alarm and Control System (CSACS).		2.02 The two primary states of this circuit are the transferred state and the not-transferred state. In the transferred state CSACS has control of the office alarms and through this circuit performs the alarm release function following each scan. The local office audible and visual alarms are disabled by this circuit while in the transferred state. In the not-transferred state CSACS is denied the alarm release capability and the local office audible and visual alarms are enabled.
		2.03 Transfer from the not-transferred state to the transferred state may be accomplished either locally by operating the TR key at the test frame or remotely from CSACS when it closes ground to the transfer control point. Transfer from the transferred state to the not-transferred state can only be accomplished at the local office test frame.
		2.04 Alarm release, as stated previously, is performed by CSACS at the end of each scan while this circuit is in the transferred state. Operation of the MAR key at the test frame also accomplishes alarm release regardless of the primary state of this circuit.

## SECTION II - DETAILED DESCRIPTION

### 1. ALARM TRANSFER - SC1,2

- 1.01 Transfer from the not-transferred state, relay NTR operated, to the transferred state.
- 1.02 While in the transferred state, relay NTR released, alarm release is performed by CSACS at the end of each scan.
- 1.03 Once in the transferred state, transfer of alarms back to local control can only be accomplished by operating and releasing the TR key at the office test frame.

#### LOCAL

- 1.04 Operation of the TR key at the office test frame releases relay NTR.
- 1.05 Relay NTR released:
  - (a) Disables the office alarm circuit audible and visual alarm functions.
  - (b) Extinguishes the LAC lamp at the office test frame.
  - (c) Partially closes the alarm release path to the CSACS control point for this function.
  - (d) Removes the not-transferred signal to the associated CSACS scan point.
  - (e) Opens lead RG from CSACS to lead MBR of the office test frame.
  - (f) Lights the AT lamp at the office test frame.
  - (g) Operates relay REM which signals specific circuits within the office of the unattended status.

#### REMOTE

- 1.06 Closure of the CSACS control point associated with lead REM operates relay TR.
- 1.07 Relay TR operated:
  - (a) Locks to the normal TR key at the office test frame.
  - (b) Open the NTR relay operate path releasing it.
  - (c) Lights the AT and TR lamps at the office test frame.
- 1.08 Relay NTR released:
  - (a) Disables the office alarm circuit audible and visual alarm functions.

- (b) Extinguishes the LAC lamp at the office test frame.
- (c) Partially closes the alarm release path to the CSACS control point for this function.
- (d) Removes the not-transferred signal to the associated CSACS scan point.
- (e) Opens lead RG from CSACS to lead MBR of the office test frame.
- (f) Operates relay REM which signals specific circuits within the office of the unattended status.

### 2. RETURNING ALARMS TO LOCAL CONTROL - SC5

- 2.01 Transfer from the transferred state to the not-transferred state can only be performed locally.
- 2.02 While this circuit is in the not-transferred state, relay NTR operated, CSACS has no control of alarm release. Alarm release can only be effected by operation of the MAR key at the office test frame.
- 2.03 Once in the not-transferred state alarm transfer can be effected from either the operation of the TR key at the office test frame or closure at the remote transfer control point by CSACS.
- 2.04 If the TR key of the office test frame is in its normal position with lamps AT and TR lit, then the key must first be operated, then released.
- 2.05 Operation of the TR key releases relay TR.
- 2.06 Relay TR released:
  - (a) Enables the NTR relay operate path.
  - (b) Extinguishes the TR lamp.
- 2.07 Release of the TR key closes the NTR relay operate path.
- 2.08 Relay NTR operated:
  - (a) Lights the LAC lamp and extinguishes the AT lamp at the office test frame.
  - (b) Enables the office alarm circuit audible and visual alarm functions.
  - (c) Partially opens the alarm release path to the CSACS control point for this function.
  - (d) Applies a positive signal to a CSA control point indicating office alarms not-transferred.

- (e) Closes lead RG from CSACS to lead MBR of the office test frame.
- (f) Releases relay REM.
- 2.09 If the TR key of the office test frame is in its operated position with lamp AT lit, transfer of alarms back to local control is accomplished by releasing the TR key.
- 2.10 Release of the TR key closes the NTR relay operate path.
- 2.11 Relay NTR operated:
  - (a) Lights the LAC lamp and extinguishes the AT lamp at the office test frame.
  - (b) Enables the office alarm circuit audible and visual alarm functions.
  - (c) Partially opens the alarm release path to the CSACS control point for this function.
  - (d) Applies a positive signal to a CSACS control point indicating office alarms not-transferred.
  - (e) Closes lead RG from CSACS to lead MBR of the office test frame.
  - (f) Release relay REM.

### 3. ALARM RELEASE - SC3, 4

#### LOCAL

- 3.01 Operation of the MAR key at the office test frame operates relay AR.
- 3.02 Relay AR operated:
  - (a) Operates relay ARA.
  - (b) Operates relay AR1.
- 3.03 Relay ARA operated provides a lock path for relay AR1.
- 3.04 Relay AR1 operated:
  - (a) Locks to relay ARA.
  - (b) Opens or closes grounds or opens a loop to release releasable central office alarms.
- 3.05 Release of the MAR key releases slow-release relay AR.

- 3.06 Relay AR released:
  - (a) Releases slow-release relay ARA.
  - (b) Opens the operate path of relay AR1.
- 3.07 When relay ARA finally releases it opens the lock path of relay AR1 releasing it.
- 3.08 Relay AR1 released recloses or opens grounds or recloses a loop to restore alarm lock paths for new alarm conditions.

#### REMOTE

- 3.09 Closure of the alarm release control point by CSACS provides an end of scan signal and operates relay ES. Relay ES operated, operates relay AR if alarms are transferred.
- 3.10 Relay AR operated:
  - (a) Operates relay ARA.
  - (b) Operates relay AR1.
- 3.11 Relay ARA operated provides a lock path for relay AR1.
- 3.12 Relay AR1 operated:
  - (a) Locks to relay ARA.
  - (b) Opens or closes grounds or opens a loop to release releasable central office alarms.
- 3.13 The alarm release control point should remain closed approximately 670 milliseconds. When opened relay ES releases and slow-release relay AR is released.
- 3.14 Relay AR released:
  - (a) Releases slow-release relay ARA.
  - (b) Opens the operate path of relay AR1.
- 3.15 When relay ARA finally releases it opens the lock path of relay AR1 releasing it.
- 3.16 Relay AR1 released recloses or opens grounds or recloses a loop to restore alarm lock paths for new alarm conditions.

### 4. TROUBLE CONDITIONS

- 4.01 Alarms transferred to CSACS without apparent reason.

- (a) Failure of alarm circuit battery results in automatic transfer of alarms.

#### 4.02 Alarm release ineffective

- (a) Failure of battery in this circuit disables the alarm release function.

### SECTION III - REFERENCE DATA

#### 1. WORKING LIMITS

- 1.01 None.

#### 2. FUNCTIONAL DESIGNATIONS

##### 2.01 Relays

<u>Designation</u>	<u>Meaning</u>
AR	Alarm Release
AR1	Alarm Release 1
ARA	Alarm Release Auxiliary
ES	End of Scan (Signals the end of each scan)
NTR	Not Transferred
REM	Remote (unattended)
TR	Transfer

#### 3. FUNCTIONS

- 3.01 Performs alarm transfer function for offices arranged for operation with CSACS. Will accept the command for this function either remotely from CSACS or locally from the TR key of the office test frame.
- 3.02 Performs alarm release function for offices arranged for operation with CSACS. Will accept the command for this function either remotely from CSACS or locally from the MAR key at the office test frame.
- 3.03 Provides visual indications at the office test frame of the transfer state of office alarms.
- 3.04 Disables CSACS control of alarm release when in the not-transferred state.
- 3.05 Enables office alarm circuit audible and visual alarm functions when in the not-transferred state.

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#### 4. CONNECTING CIRCUITS

- 4.01 When this circuit is listed on a key-sheet, the connecting information listed thereon is to be followed.

- (a) Test Circuit - SD-26411-01.
- (b) Alarm Circuit - SD-26393-01.
- (c) CSACS Interconnection Circuit - SD-1P026-01.
- (d) Circuits Requiring Remote Control of Alarm Release -
- (e) Ringing and Tone Circuit - SD-26457-01.
- (f) Marker Connector Circuit - SD-26389-01.
- (g) Line, Line Switch and Connector Circuit - SD-26382-01.

#### 5. MANUFACTURING TESTING REQUIREMENTS

- 5.01 None.

### SECTION IV - REASONS FOR REISSUE

#### B. Changes in Apparatus

##### B.1 Removed

AR - 446K Diode - Option Z - Fig. 1

##### B.2 Added

ES - AJ15 Relay - Option Y - Fig. 1  
REM - AJ83 Relay - Option Y - Fig. 1  
ES - 185A Network - Option Y - Fig. 1

#### D. Description of Changes

- D.1 The following changes have been made so that this circuit is compatible with the Centralized Status, Alarm and Control System (CSACS).
- D.2 The AR diode is removed.
- D.3 The ES and REM relays are added.
- D.4 The ES network is added.
- D.5 Circuit Note 104 has been revised
- D.6 Sequence Charts 1, 2, 4, and 5 have been revised.