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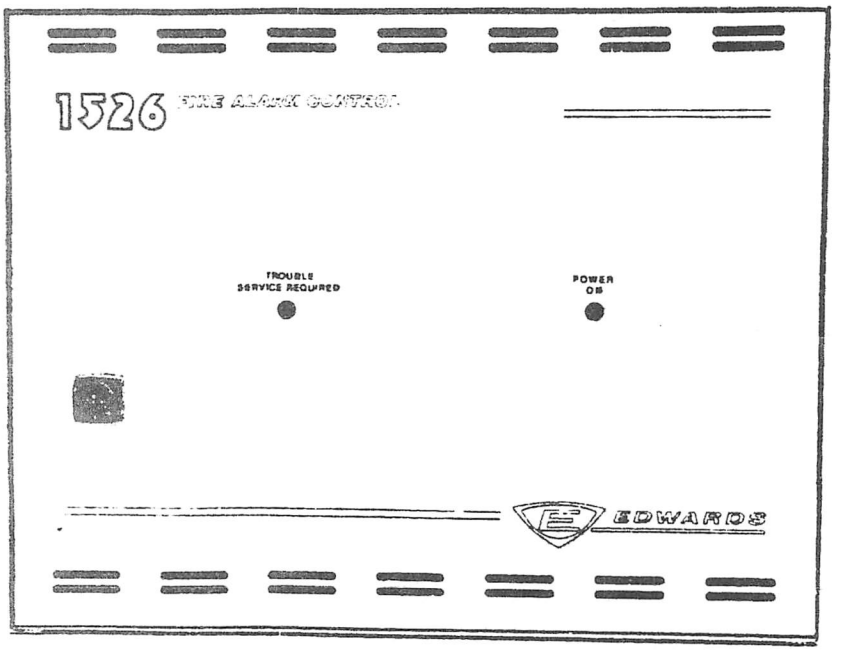
A UNIT OF GENERAL SIGNAL GS

EDWARDS



CONTROL PANEL

EDWARDS CAT. NO. 1526 FIRE ALARM SYSTEM

OPERATION AND INSTALLATION MANUAL

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Edwards Company, Inc., Norwalk, CT 06856
A UNIT OF GENERAL SIGNAL

EDWARDS OWNER'S MANUAL
1526 FIRE ALARM SYSTEM

INTRODUCTION

A fire alarm system is a means of providing an early warning of a fire in any part of the building. An alarm may be turned in either manually by the operator of a manual pull station, or automatically by any one of the automatic heat detectors or automatic smoke detectors installed throughout the building. Whenever an alarm is turned in, all fire alarm signals will sound to evacuate all occupants.

The 1526 series fire alarm control is a single zone (one initiating circuit, one signal circuit), AC/DC system which can operate with a variety of optional features.

NORMAL MODE

The fire alarm system is electronically supervised against a fault condition. The power-on indicator is illuminated. All other indicators and signals are off.

ALARM MODE

Operation of any initiating device (manual fire alarm station, automatic heat detector, automatic smoke detector, etc.) sounds all the fire alarm signals to evacuate the occupants. The fire alarm signals continue to sound until the system is reset. Auxiliary alarm contacts, which can be used to initiate or terminate a separate function, operate whenever a fire alarm is initiated. The auxiliary alarm contacts return to normal when the fire alarm system is reset.

TROUBLE MODE

If a supervised fault should occur on the fire alarm system, the trouble signal pulses and the trouble indicator flashes on the control unit door (and at the Cat. 1526-70A remote trouble indicator if provided). The trouble signal can be silenced by placing the trouble silencing switch (inside the control panel), in the "silence" position. When the trouble is cleared, the trouble signal sounds continuously, thus indicating the off-normal switch position. Return the trouble silencing switch to the normal position to silence the trouble signal.

IF THE TROUBLE INDICATOR FLASHES, THE MAINTENANCE OR SERVICE DEPARTMENT MUST BE NOTIFIED IMMEDIATELY SO THAT THE FAULT CAN BE CLEARED AS QUICKLY AS POSSIBLE.

TROUBLE CONTACTS

Auxiliary trouble contacts operate whenever a trouble occurs on the fire alarm system. These trouble contacts can be used to initiate or terminate a separate function.

STANDBY POWER

The 1526 fire alarm system can be provided with rechargeable batteries for use as a secondary (standby) power supply.

STANDBY BATTERY (Cat. 1526-53A)

During AC power failure the batteries provide capacity for 24 hours of supervision, followed by the sounding of the fire alarm signals for 5 minutes.

Whenever normal AC power fails, the system will automatically switch to the standby battery pack. The trouble indicator flashes and the trouble sounds while normal AC power is absent. When normal AC power is restored, the system will automatically switch back to the AC power and will automatically recharge the batteries. An alarm will NOT be lost during power transfer; either AC to DC or DC to AC.

RESET

To reset the fire alarm system, first all operated initiating devices must be returned to their normal state. After the initiating devices are returned to normal, press the reset breaker, inside the control panel, for at least 3 seconds.

transfers to DC standby power.

c. Loss of DC standby power.
Ensure that the connector is firmly inserted into the receptacle on the control unit door. Ensure that AC power is available to the system. Check battery fuse (located behind screen mesh).

d. Open circuit or ground fault on the initiating circuit.
Tag and disconnect the wires for the initiating circuit (terminals 11 and 12). Check the disconnected wires with an ohmmeter for an open circuit. Normally, the meter should read about 1.8K ohms (resistance of end-of-line resistor). Also, check for a ground on either of the disconnected wires. Correct the open circuit or ground fault, and reconnect the wires. **Note:** systems using ionization or photo-electric detectors on the initiating circuit must be reconnected with the correct polarity.

e. Open circuit, short circuit or ground fault on the signal circuit.
Tag and disconnect the wires for the signal circuit (terminals 13 and 14). Connect an ohmmeter to the disconnected wires and measure the resistance. Reverse the ohmmeter leads and again measure the resistance. One resistance should be in the order of 1.8 K ohms (resistance of the end-of-line resistor) while the other resistance should be between 50 and 1000 ohms (resistance of the signals in parallel). If these two resistance readings cannot be obtained one or more of the signal devices may be connected with the wrong polarity, or the wiring may have an open or short circuit. Also, check each signal circuit wire for a ground. **Note:** Signal circuit wires must be reconnected with the **correct polarity.**

f. Ground fault on wiring to optional remote trouble unit.
Tag and disconnect the wiring to the remote trouble unit (terminals 3, 4 and 5) and check each wire for a ground. Remove ground and reconnect wiring.

g. Obscuration smoke detector fault. (Cat. No. 6392-135 only).
If the initiating circuit has an open, the trouble contacts in the obscuration detector may have opened. Ensure 24V DC (supplied from terminals 9 and 10) is available to the power input of the obscuration detectors. Check lamp in the detector and replace if necessary.

REPLACEMENT PARTS

Battery Fuse: 5A

Battery Pack: 1526-53A

MAINTENANCE

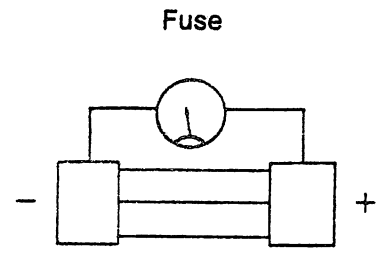
All relays have covers which seal out dust and dirt, while the solid state components rarely require attention. The standby battery packs which are provided with the system should be inspected and checked at regular intervals. See "TEST" for details.

If automatic smoke detectors are used on the fire alarm system, they will require periodic maintenance. The detectors must be cleaned and the sensitivity must be checked. Since these detectors require specialized technical knowledge, it is recommended that an Edwards serviceman or representative perform the necessary maintenance. Contact the nearest office of Edwards for detailed information.

BATTERY

	Charge Current	Voltage
1526-53A	500 ma or less	27-27.5V

TO TEST BATTERY CHARGE CURRENT: Turn off AC power. Romove protective mesh. Remove battery fuse. Insert ammeter leads as shown. Turn AC power on. The battery charge current will vary, depending on the battery used. After test is complete, turn off AC power, reinsert fuse, and reinstall protective cover. Turn AC power back on.



TO TEST BATTERY VOLTAGE: Measure voltage across battery terminals.

To reset the manual fire alarm station, first open the station by turning the screw at the top center of the station in the counter-clockwise direction. Replace the glass rod and return the switch to the normal position. Close the manual station.

Several different types of automatic heat detectors are available. However, all heat detectors operate either on the "fixed temperature" principle combined with the "rate-of-rise of temperature" principle, or on the fixed temperature principle alone.

If the heat detector operates on the fixed temperature principle, it can be either a self-restor-detector or a non-restoring detector. A self-restoring detector will reset as soon as the high temperature has been eliminated. A non-restoring detector cannot be reset and must be replaced. Usually, an indicator is provided to show that the detector needs replacement e.g. center disc will drop to a vertical position, etc. If the detector operates on the rate-of-rise of temperature principle, the detector will reset as soon as the abnormal temperature rise in the protected area has been eliminated.

Automatic smoke detectors must be completely clear of smoke before the fire alarm system will reset. By gently blowing through the automatic smoke detector, most of the smoke inside the detector can be removed.

TEST

A test can be made by actually operating a manual pull station. Note that this will cause the auxiliary alarm contacts to operate, as in the case of an actual fire. Ensure that the operation of these auxiliary alarm contacts will not cause any undue problems due to the test. Notify responsible personnel in charge of the building before making any test.

System tests should be conducted according to and at the intervals required by the local fire regulations. Where local regulations do not specify test intervals, it is recommended that one-twelfth of the manual stations should be tested each month. A record should be maintained of all tests and of the stations from which the tests originated.

Instead of actually pulling the manual station, and therefore breaking the glass, the manual pull station can be opened by turning the screw at the top center of the station in a counter-clockwise direction. The switch can then be placed in the test position. All the fire alarm signals should be checked to ensure that they are sounding. When the test is completed, the switch on the pull station should be returned to normal and the pull station should be closed. Press the reset button, inside the control unit, for at least 3 seconds to reset the system.

Once a year, or as directed by the local fire alarm authority, the capacity of the battery can be checked. Disconnect AC power to the fire alarm system for 24 hours so that supervisory current is provided by the battery. At the end of 24 hours, sound the fire alarm signal for 5 minutes. If the battery pack cannot provide this operation, it should be replaced. Reconnect AC power.

TROUBLE SHOOTING

The following is the procedure to be followed if the control unit should indicate a trouble condition. This procedure is to be used for the correction of minor external faults. In case of a major problem, the best policy is to contact the nearest Edwards service center, where qualified personnel are always at your service.

> WARNING!
> DISCONNECT POWER FROM THE SYSTEM, IF POSSIBLE, WHEN SERVICING THE EQUIPMENT. OTHER SOURCES OF POWER MAY BE CONNECTED TO THE AUXILIARY CONTACTS. DISCONNECT THESE OTHER SOURCES OF POWER BEFORE WORKING ON THE SYSTEM. SERVICING MUST BE ATTEMPTED ONLY BY QUALIFIED ELECTRICAL PERSONNEL.

This fire alarm control unit electronically supervises certain functions of the fire alarm system. Any of the following conditions will pulse the trouble signal and flash the trouble lamp:

a. Trouble silencing switch in the "silence" position.
   If the trouble silencing switch is left in the "silence" position, with no trouble present, a trouble signal will sound continuously. Return switch to normal.
b. Loss of AC power.
   On loss of AC power the system automatically

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A-

INSTALLATION

POWER

INSTALLATION OF ALL UNITS IN THE SYSTEM SHOULD BE IN STRICT ACCORDANCE WITH ALL LOCAL CODES, ORDINANCES AND REGULATIONS AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS THAT ARE APPLICABLE.

MAKE POWER CONNECTIONS AS SHOWN. CONNECT RECHARGEABLE BATTERY PACK AS SHOWN.

THE PANEL "POWER ON" LAMP WILL LIGHT WHEN PRIMARY AC POWER IS CONNECTED. THE "POWER ON" LAMP WILL EXTINGUISH WITH THE LOSS OF PRIMARY AC POWER IN PANELS USING BATTERY PACK FOR SECONDARY POWER SOURCE.

DC SIGNAL CIRCUIT

GENERAL

THIS DRAWING DESCRIBES INSTALLATION AND OPERATION OF THE SIGNAL CIRCUIT ON CAT. 1526 CONTROL PANEL, SIGNAL TO BE USED ARE 20/24V DC SUPERVISED SIGNALS MAXIMUM SIGNAL CURRENT IS 2.5 AMPS.

1. ALL SIGNAL DEVICES ARE POLARIZED AND ARE CONNECTED IN PARALLEL. AN END OF LINE RESISTOR, MUST BE MOUNTED **BEYOND** THE LAST SIGNAL DEVICE.

   BRANCH SIGNAL CIRCUITS REQUIRE 4 WIRES AS SHOWN ON SHT. 1.

2. ALL SIGNAL CIRCUIT WIRES MUST BE FREE FROM GROUNDS, OPENS, AND SHORTS. CHECK CIRCUIT WIRING BEFORE CONNECTING TO STRIP PANEL.

OPERATION

1. THE WIRING TO THE SIGNAL DEVICES AND THE SIGNAL DEVICES THEMSELVES ARE ELECTRICALLY SUPERVISED. A COMMON TROUBLE SIGNAL WILL RESULT FROM ANY OF THE FOLLOWING:

   A) OPEN OR SHORT ON THE WIRING TO THE SIGNAL DEVICES

   B) DIODE SHORTED IN THE SIGNAL DEVICE ITSELF

   THE ABOVE CONDITIONS WILL CAUSE THE COMMON TROUBLE LAMP AND BUZZER ON THE PANEL TO BE ENERGIZED

2. UPON AN ALARM, SIGNAL POWER WILL BE APPLIED TO THE SIGNAL DEVICES CAUSING THEM TO SOUND

AUXILIARY CONNECTIONS

AUXILIARY DRY CONTACTS ARE PROVIDED FOR VARIOUS SUPPLEMENTARY FUNCTIONS RATINGS ARE SHOWN ON THIS DRAWING

AUXILIARY DC POWER (29V) IS PROVIDED. OBSERVE POLARITY AND LIMITATIONS

OPERATION

SUPERVISORY MODE

"POWER ON" LAMP WILL BE LIGHTED, ALL OTHER LAMPS AND TROUBLE BUZZER WILL BE DEENERGIZED

TROUBLE MODE

A FAULT ON ANY SUPERVISED CIRCUIT OR FAILURE OF PRIMARY POWER (L1), WILL CAUSE THE TROUBLE BUZZER TO SOUND AND THE TROUBLE LAMP TO LIGHT

ANY TROUBLE CONDITION WILL CAUSE THE AUXILIARY TROUBLE CONTACTS TO TRANSFER

OPERATION OF THE TROUBLE SILENCE SWITCH WILL SILENCE THE TROUBLE BUZZER THE TROUBLE LAMP WILL REMAIN LIGHTED

TERMINALS 3, 4, AND 5 PROVIDE FOR CONNECTIONS TO AN OPTIONAL REMOTE TROUBLE UNIT. CAT. 1526-70A

WHEN THE SYSTEM OPERATES FROM SECONDARY BATTERY POWER, TROUBLE LAMP AND BUZZER WILL OPERATE FOR ONE SECOND AT APPROXIMATELY 10 SECOND INTERVALS

ALARM MODE

ON ALARM, THE ALARM SIGNALS WILL SOUND (VIBRATING 1526-7, -8, -10, -11 SINGLE STROKE 1526-9, -12)

ALARM SIGNALS WILL BE SILENCED WHEN THE SYSTEM IS RESET.

—OR—

BY INTERNAL TIMER ON 1526-8, -11

—OR—

BY SIGNAL SILENCE PUSH ON 1526-10, -11, -12

NOTES:

1. THESE CIRCUITS ARE SUPERVISED
2. THESE CIRCUITS ARE UNSUPERVISED
3. THE MAXIMUM NUMBER OF DETECTORS ALLOWED IS 30 IONIZATION OR 15 PHOTOELECTRONIC OR A COMBINATION IN A RATIO OF 2 IONIZATION TO 1 PHOTOELECTRONIC DETECTOR
4. NOT SUITABLE FOR CONNECTION TO WATERFLOW ALARM DEVICES.

ISS	REMARKS	DATE	CH'D	APP
3	REVISED	1/30/81		
2	ECN 5304			

UNLESS OTHERWISE SPECIFIED	DRFG.
DIMENSIONS ARE IN INCHES TOLERANCES: DEC. ± .005 FRAC. ± 1/64" ANG. ± 1°	CHKD. ENGR. APPVD.
MATERIAL:	FIRST USED ON:
FINISH:	REF.

EDWARDS
A UNIT OF GENERAL SIGNAL
Norwalk, Connecticut 06856

TITLE:
FIRE ALARM SYSTEM
1526-7, -8, -9, -10, -11, -12

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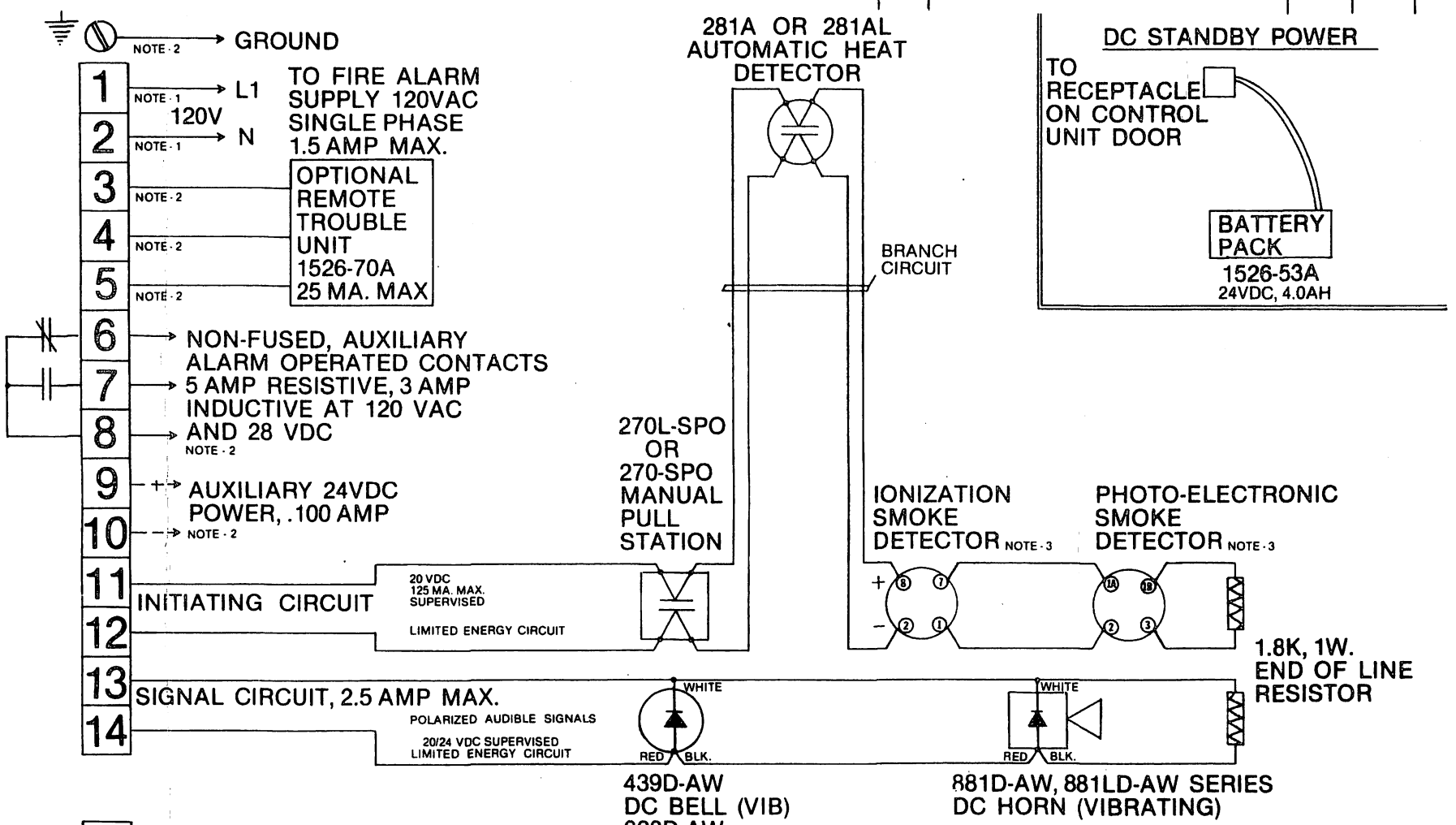
SCALE | SHT. 2 OF 2

DWG. NO.
A- C-F1526-T1 SH. 1 OF 2

REVISIONS				
ISS.	REMARKS	DATE	CHKD.	APPVD.
3	REVISED	1/30/81		



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MATERIAL:	FIRST USED ON:
FINISH:	REF.

GS EDWARDS
A UNIT OF GENERAL SIGNAL
Norwalk, Connecticut 06856

TITLE: INSTALLATION
1526-7, -8, -9, -10, -11, -12

DWG. NO.	ISSUE
A-F1526 T1	3
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