

U.L. LISTED CANADIAN LISTED CSFM: 7300-1418:100

The The Cookson Company *TEST A FIRE* Release Device/Control Panel is a U.L. Listed, Canadian Listed (C-UL) and California State Fire Marshal Listed (CSFM) normally energized Fail-Safe device incorporating state of the art electronic control circuitry. The *TEST A FIRE* is designed to be used with motorized doors incorporating a reversing feature safety edge to create an automated door closing system. “DO NOT” install this unit without a safety edge.

The *TEST A FIRE* high performance control panel responds to emergency conditions generated by manual or automatic initiating devices. Upon activation from such a device, the unit can provide a voice warning (option) indicating that a closure is about to occur and will then close the door thru the motor. If the alarm is still present and power is available to the operator, the door can be opened by depressing the open switch of the operator, after which the door will close again. If the door meets an obstruction while in alarm, the door will reverse and make three attempts to close, after which the motor will be shut off and the release mechanism will release the door onto the obstruction. The unit can be factory ordered with cycle count from 1 thru 10 (3 count standard), as well as continuous cycling capability. A safety timer within the unit will turn the motor off and perform a mechanical release if the lower limit is not detected within a predetermined time period. Verify factory installed options to desired features.

The *TEST A FIRE* features include time delay on alarm, remote test, motor voltage sensing, form-C output, lower limit detection, safety timer, battery support for release device logic, smoke detectors, multi-lingual voice (option), standard annunciators and trouble diagnostic capabilities (does not support motor). Check model label on unit to be installed to verify operating voltage.

CAUTION: Review all installation instructions, procedures, referenced publications, cautions and warnings contained within this manual prior to installing and/or servicing this product. As with all releasing device systems, maximum fire protection is provided when installed in accordance with factory specifications and used with fuse link systems. “DO NOT” install this unit without a fuse link system.

TEST WEEKLY TO ASSURE PROPER OPERATION OF RELEASE DEVICE/CONTROL PANEL

Installation and testing to factory specifications shall be performed by factory authorized personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters Laboratories (UL), National Electrical Code (NEC), local, state, county, district and/or other applicable building and fire standards, guidelines, regulations and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).



TECHNICAL SUPPORT (602) 272-4244

INSTALLATION INSTRUCTIONS -To be performed by factory authorized personnel only.

The following installation procedures must be followed to assure performance of the *TEST A FIRE* Release Device/Control Panel to factory standards.

A. MOUNTING PROCEDURE (Figure 1)

Typical installation configuration may not accurately depict door manufacturer's recommendations. See door manufacturer's recommendations for use of this product with specific door being utilized. All hardware required shall be supplied by the door installer or manufacturer. Use only hardware approved or recognized by the appropriate testing and listing agencies in conjunction with the installation of this product.

1. The release device shall be mounted on a vertical surface with chain end link exiting side of enclosure as illustrated in figure 1.
2. Release device enclosure shall be mounted with minimum #10 size fastening screws or bolts for securing to structures other than masonry. Masonry applications shall utilize 1/4" or greater anchors or studs as required to insure proper mounting strength.
3. Release device and associated hardware (sash chain or 1/16 cable, eyebolts, *fuse links, turnbuckles) shall be installed as per figure 1 or door manufacturers recommendations. Note should be taken that the end link direction of pull is perpendicular to the enclosure side. An eyebolt installed at a minimum distance of 12 inches from the release device should adequately redirect sash chain pull as illustrated in Figure 1. *DO NOT use this device without fuse links.
4. Complete hardware installation by connecting fuse links, sash chain, S-hooks and turnbuckles where required. Push reset lever in direction of arrow on label to allow insertion of end link through release device side opening. Push end link completely in and release reset lever to latch end link. Remove sash chain or cable slack by adjusting turnbuckle.
* **DO NOT exceed maximum pull rating of 40 lbs. on releasing device.**

B. SMOKE DETECTORS.

When installing smoke detectors with this unit refer to NFPA 72-1993 and NFPA 80, paragraph 6-6, for instructions concerning proper placement and detection coverage. See Electrical Connections page 2A for wiring information. End of Line Devices shall be installed for supervision of electrical power to smoke detector. "DO NOT" interface this unit to smoke detectors if electrical supervision is not provided by means of an End-of-Line Device used in conjunction with the *Test A Fire*!

C. ELECTRICAL CONNECTIONS

Installation of all wiring and connections, including Class 1 and Class 2 circuits, shall be performed in accordance with, but not limited to, the latest NFPA, U.L. and N.E.C. standards and codes. In addition, all installations subject to Canadian standards shall be performed in accordance with the Canadian Electrical Code, Part I, with respect to wiring material type, wiring gauge related to power capacity requirements and circuit length and wiring methods. This unit is designed to be used on motorized doors incorporating a reversing feature safety edge.

DO NOT use this unit on a motorized door if a safety edge has not been installed.

SEE Figure 2 - Verify wiring configuration with that recommended by door manufacturer for use of this product with specific door and accessories being utilized. All wiring beginning at step 4 is low voltage. 18 gauge wire is recommended.

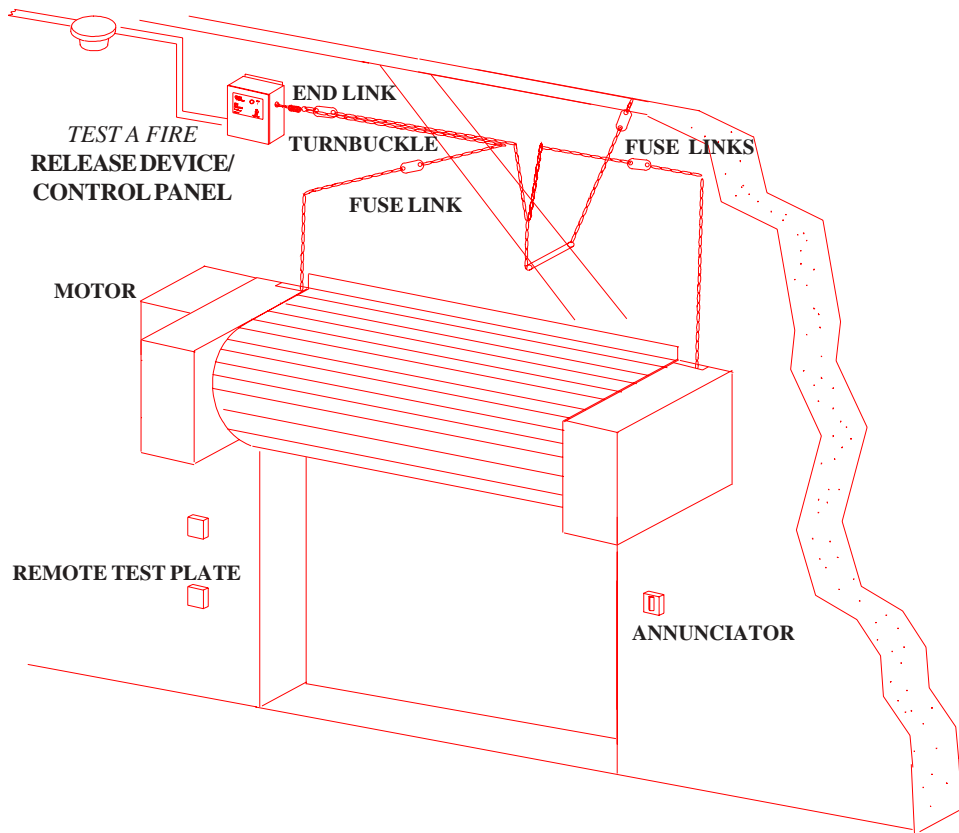
1. Turn off power supply sources for *Test A Fire* as well as motor before beginning.
2. Verify voltage rating of release device/control panel to power source being utilized. Model voltage indicated on side of unit.
3. Connect power source inputs to TB5, screws 1 & 2. On 24vdc units observe proper polarity by placing positive (+) wire to screw 1. TB5 screw 3 shall be utilized for earth ground where applicable. (**DO NOT** connect battery)
4. (a) Normally closed initiating devices - remove jumper from TB1 screw 2 & 3. Connect wiring from N/C initiating device loop to TB1 screws 2 & 3. Auxiliary power (+12vdc) for smoke detectors may be obtained from TB2. Observe proper polarity, TB2-2(+), TB2-1 (-). 4 detector maximum.
(b) Normally open initiating devices - (The N/C & N/O loops may be used simultaneously, but if the N/C loop "IS NOT" used, make sure the jumper is installed across TB1 screws 2 & 3) Connect wiring from N/O initiating device loop to TB1 screws 4 & 5 (do not share loop with other alarm circuits), making sure end of line supervisory resistor (51 K ohm @ 1/4 Watt) is installed at end of line as indicated. Auxiliary power (+12vdc) for smoke detectors may be obtained from TB2. Observe proper polarity, TB2-2(+), TB2-1 (-). 4 detector maximum.

Note: TB1 initiating device loops are supervised and cannot be directly series or paralleled between multiple release devices or shared with other alarm equipment. For proper wiring configurations from multiple smoke detectors or signalling for simultaneous closure on multiple doors call tech support. Incorrect wiring between units may cause damage to the release control circuit and void warranty.

5. Connect motor control sensing voltage (24-30V ac or dc) from motor controller transformer secondary to TB3 screws 1 (+) & 2 (-). This connection must be made or the unit will perform a mechanical release in all alarm conditions.

* TYPICAL INSTALLATION

FIGURE 1

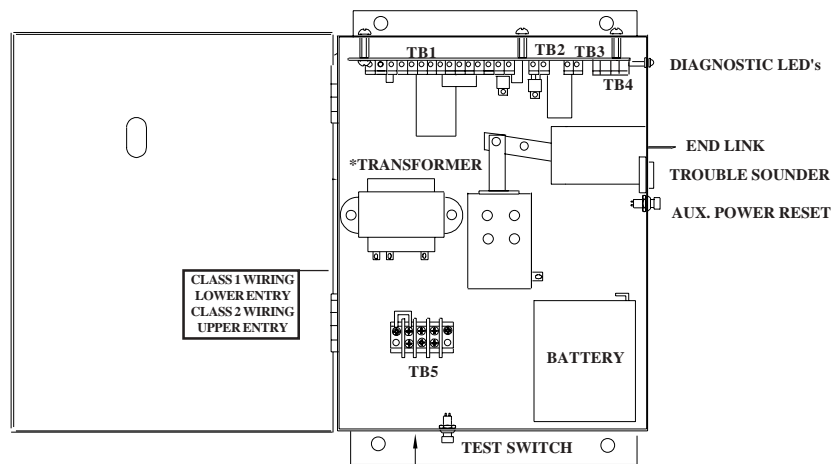


* Actual configuration may differ. See door manufacturers recommendations and NFPA 80 for use of this device and fusible links with specific door. **DO NOT** install this unit without fusible links.

DO NOT exceed 40lb. maximum pull rating on release mechanism.

TEST A FIRE INSIDE VIEW

FIGURE 1A



* TRANSFORMER FOUND IN 120VAC MODELS ONLY

- * 6. (a) Aux. Lower limit switch. Connect wiring from N/C electrical loop (switch closed when door is up) to TB1 screws 1 & 18 "or" N/O electrical loop (switch open with door up) to TB1-1 & 16. This input precludes the door mechanism from releasing if a lower limit is detected (door is already closed). This circuit also turns off sounders in down limit.
- (b) Aux. Upper limit switch. Connect wiring from N/O electrical loop (switch closed when door is up) to TB1-8 & 9 "or" N/C electrical loop (switch open with door up) to TB1-8 & 13. Connection to an auxiliary up limit switch is required for 3 cycle obstruction count feature. Set aux. limit to toggle before operator limit when door is traveling toward open position. Improper adjustment will result in continuous cycling of door.

* Note: Electrical loops must be provided as dry contacts and may not be used in conjunction with the simultaneous switching of a motor control or any other voltage through the same contacts. Connections of this type will result in immediate damage to the release device. Jumpers must remain installed on loops not being used.

- 7. Motor control relay (Delay relay) - Connect wiring from TB1-14 & 17 across motor control down switch (For use with N/O down switch). This relay output latches to initiate a door closure thru the operator after a ten second delay.
- 8. Remote test station. - (option) This option disables the cycle counter to allow testing of the door without a mechanical release after 3 cycles. Connect remote test switch common to TB2-2, N/C to TB4-1 and N/O to TB4-3. Factory jumper should be removed between TB2-2 & TB4-1 when using test switch. Leave jumper in if test plate is not used.
- 9. Annunciator - (option) connect annunciator to TB1-6 (-) & 7 (+). If Voice Module has been factory installed see SSVB Addendum.

Note: Battery should "not" be connected until testing of unit is being performed.

TESTING OF RELEASE DEVICE/CONTROL PANEL SHALL BE PERFORMED AND WITNESSED FOR NORMAL OPERATION AFTER INSTALLATION. REFER TO TEST PROCEDURES CONTAINED HEREIN, AS WELL AS ANY OTHER TESTING PROGRAMS RECOMMENDED BY DOOR MANUFACTURER.

TESTA FIRE RELEASE DEVICE/CONTROL PANEL
POWER REQUIREMENTS & MECHANICAL SPECIFICATIONS

VOLTAGE RATING

TESTA FIRE-24DC 24VDC +10% / -15%
TESTA FIRE-24AC 24VAC +10% / -15%
TESTA FIRE-120AC 120VAC +10% / -15%

CURRENT REQUIREMENTS (1)

SUPERVISORY (non-alarm) .100A / ALARM .500A MAX
 SUPERVISORY (non-alarm) .100A / ALARM .500A MAX
 SUPERVISORY (non-alarm) .100A / ALARM .500A MAX

(1) Current max. with standard accessories including one Voice Module. Current of additional accessories shall not exceed fuse ratings.
 NOTE: Initial power up inrush current shall not exceed 3 times rated supervisory current on any model.

MOTOR CONTROL SENSE - ALL MODELS

Input Voltage: 24V ac/dc typical +15% / -10%
 Input Current: Not to exceed .004A

INITIATING/DOOR INPUTS

CAUTION: All initiating devices shall be dry contact type only
 Maximum loop resistance: 100 Ohms
 Maximum current: Not to exceed .002A
 Maximum voltage: 15Vdc

FORM C OUTPUT (MAX. CONTACT RATING)

2A/30Vdc 60 Watt DC Resistive Load Only
 Combined Auxiliary Power: 12Vdc @ .450a

FUSES

All fuses 1A @ 250V, 2AG Fast Acting Type

MECHANICAL SPECIFICATIONS

LOAD RATING (all models)

Support and Release : 40 LB. MAX.

PHYSICAL DIMENSIONS (all models)

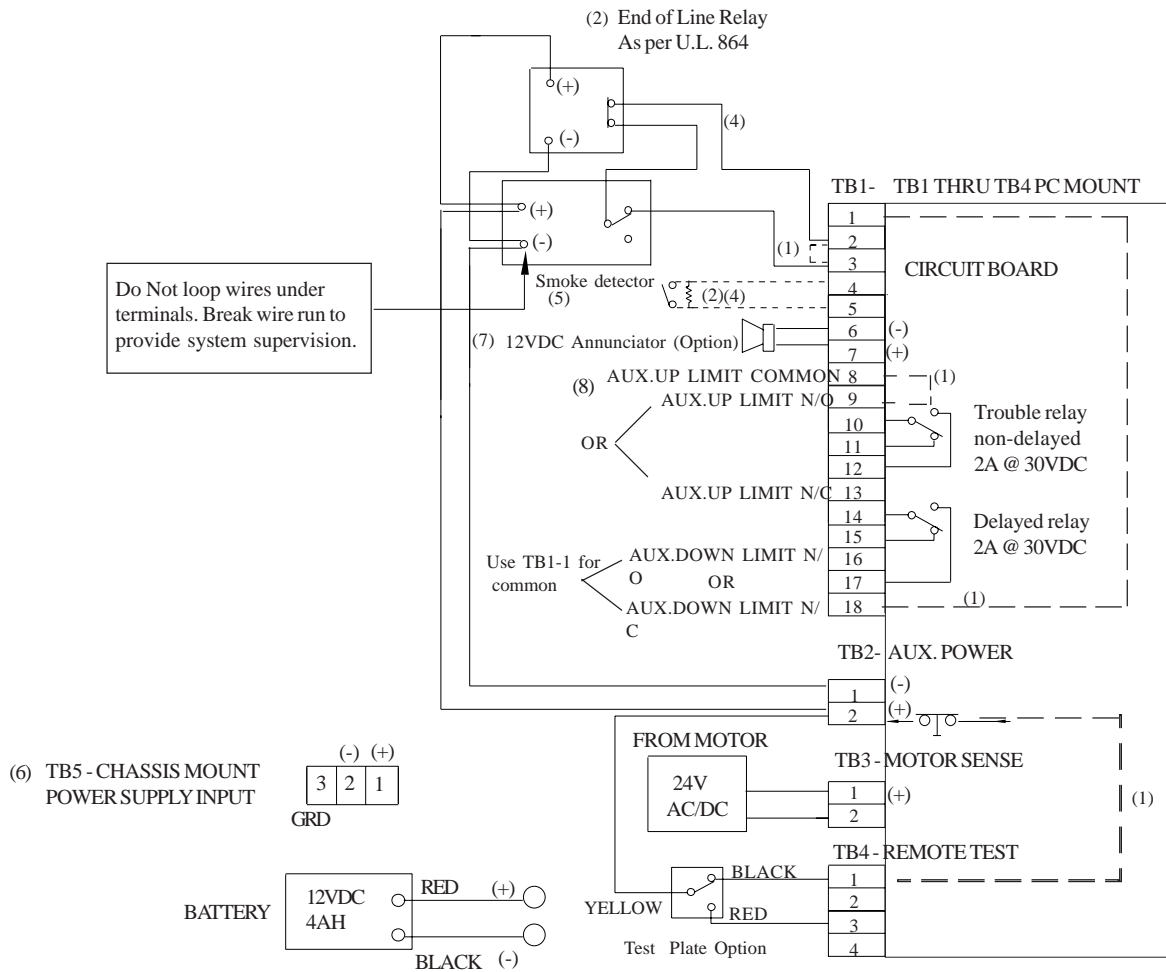
11 5/8" x 10 x 15 w/flange (H x W x D)
 10 x 10 x 4 3/4 w/out

WEIGHT (includes battery)

TESTA FIRE-120vac approx. 13 lbs.
TESTA FIRE-24vac approx. 12 lbs.
TESTA FIRE-24vdc approx. 12 lbs.

TEST A FIRE ELECTRICAL CONNECTIONS

FIGURE 2



Do Not loop wires under terminals. Break wire run to provide system supervision.

Note: All circuitry connected to/from circuit board terminal blocks TB1 thru TB4 is low voltage/low current (see electrical specs page 2). 18 gauge energy limited control cable is recommended for all connections between operator and circuit board.

- (1) DOTTED LINES INDICATE FACTORY INSTALLED JUMPERS: REMOVE WHEN CONNECTING TO N/C DEVICE. DO NOT REMOVE JUMPER IF LOOP IS UNUSED.
- (2) SUPERVISORY DEVICE MUST BE INSTALLED
- (3) ALL FUSES 1A @ 250V, 2AG FAST ACTING
- (4) MAXIMUM LOOP RESISTANCE 100 OHMS
- (5) SEE NFPA 80 AND NFPA 72-1993 FOR PROPER PLACEMENT OF DETECTOR
- (6) CLASS 1 WIRING (120VAC Models) MUST ENTER PROPER OPENING. SEE FIGURE 1A
- (7) IF UNIT CONTAINS FACTORY INSTALLED VOICE MODULE OPTION REFER TO SSVB ADDENDUM. DO NOT CONNECT A SPEAKER TO TB1-6&7. DAMAGE MAY RESULT TO UNIT.
- (8) AUX. UP LIMIT SWITCH MUST BE SET TO TOGGLE OPEN (N/C) OR CLOSED (N/O) BEFORE THE UP LIMIT SWITCH OF THE OPERATOR WHEN THE DOOR IS TRAVELING TOWARD IT'S OPEN POSITION. IF THE SWITCH IS IMPROPERLY SET THE DOOR WILL CONTINUE TO CYCLE AND WILL NOT PERFORM THE THREE CYCLE FUNCTION.

Installation of all wiring must be performed in accordance with, but not limited to, the latest NFPA, U.L. and NEC standards and codes, as well as the requirements of the final authority having jurisdiction. In addition, all installations subject to the Canadian standards, shall be performed in accordance with the Canadian Electrical Code, Part I, with respect to wiring type, wiring gauge related to power capacity requirements and circuit length and wiring methods.

D. TEST PROCEDURES

TO BE PERFORMED BY FACTORY AUTHORIZED PERSONNEL ONLY! CLEAR FIRE DOOR OPENING AND PROHIBIT TRAFFIC THRU DOOR OPENING WHILE TESTING!

Testing does not affect normal operation of alarm system when connected to release device/control panel. Testing of the *TEST A FIRE* release device is independent of, and shall in no way be interpreted as an alternative method of, testing of a central fire alarm system, motorized operator and/or any other system component employed on the fire door or counter fire door installation. Complete testing and normal operation can only be accomplished with power applied to unit. This procedure describes testing of all options. Verify options ordered and installed with unit. All tests may not apply.

POWER UP SEQUENCE: Follow proper sequence. Turning motor on before unit, or at the same time as unit, will result in a closure thru the motor. This is a normal condition when proper sequence is not followed. If a single electrical disconnect is provided for both motor and unit, have door if down limit when energizing.

Turn on power to unit. When power is applied to unit under test the Power LED (red) will light on the bottom of the release device and the battery trouble sounder will begin to beep. Connect battery leads (**observe polarity!**) to silence battery trouble. Green LED will light indicating battery is connected and charging. Turn on power to motor. Motor Sense (Disable-amber) LED will light indicating power is present at motor control secondary.

TEST PROCEDURES

- A) 1. Enclosure mounted test switch: Depress and continue to hold test button on side of release device/control panel. Annunciator will turn on indicating a door closure is about to occur and after 10 second alarm verification (10 sec. delay), delay relay will turn on motor initiating a door closure. Optional annunciator will turn off when door makes lower limit. Release test button. Depress up button on door control to raise door to open position.
2. Remote test station: This test disables the internal counter circuit and allows the door to continuously cycle if a suitable obstruction is utilized for such a test (See step 4). Insert key into remote test station and turn key in direction of test indicator. Annunciator will turn on and a door closure will occur immediately (**no delay is provided**). If no obstruction is placed in the path of the descending door, the door will fully close and the motor will turn off. If an obstruction is used, the door will continue to cycle until the key is returned to off. Return test switch to off position to silence test sounder, leaving the door closed.
3. Down limit detection: With door closed, depress and continue to hold enclosure mounted test switch. Annunciator will not turn on, indicating the door is already in the closed position. Release test button. Depress up button on door control to raise door to open position.
4. Three Cycle Obstruction test: **WARNING! THIS EQUIPMENT IS DESIGNED TO BE USED IN CONJUNCTION WITH AN OPERATOR INCORPORATING A REVERSING FEATURE SAFETY EDGE. DO NOT EXECUTE THIS TEST WITHOUT A SAFETY EDGE INSTALLED!**

Place a chair or other suitable obstruction in the normal path of the door. Stand clear from opening. Depress and continue to hold down the enclosure mounted test button. The annunciator will turn on indicating that a door closure is about to occur. After factory adjusted 10 second delay, the device will turn on the motor initiating a closure. Upon contact with the suitable obstruction being utilized, the safety edge will reverse the motor raising the door to the open position. The *TEST A FIRE* release device will make three (3) attempts to close through the motor, after which the release device will turn off the motor when the door reaches the open position and release the door through the drop release mechanism. The door will drop onto the obstruction and will close fully when the obstruction is removed. The annunciator will continue to sound until the alarm condition has been cleared. Release test button. Reset fire door release mechanism, then reset *Test A Fire* release mechanism by pushing reset knob in direction of arrow. Insert end link through enclosure opening and release reset knob latching the end link. Depress up button on motor control raising door to open position.

- B) 1. Interrupt (turn off) power to motor operator. Make sure door is fully raised.
2. Note that Motor Sense/Lower Limit Disable LED (amber) is off on side of release device indicating "power is off to motor" and/or the door is not closed. Depress and continue to hold test button on side of release device. Annunciator will sound indicating a door closure is about to occur and after factory adjusted 10 second alarm verification (10 sec. delay) device will release door. Release test button. This test verifies a mechanical release in absence of power to the motor.
3. Reset fire door release mechanism, then reset *Test A Fire* release mechanism by pushing reset lever in direction of arrow as indicated on device label. Fully insert end link through release device side opening and release reset lever to latch end link.
4. Restore power to the motor and raise door to its fully open position.
5. After completing all tests, verify that door is in its normal condition (open or closed) and that all power required for normal operation is restored to unit and operator. This equipment is designed to operate with its primary power

TROUBLE SHOOTING: SEE GUIDE AT REAR OF MANUAL IF PROBLEMS ARE ENCOUNTERED DURING TESTING OF UNIT.

REMEMBER: TESTING OF RELEASE DEVICE/CONTROL PANEL SHALL BE PERFORMED AND WITNESSED FOR NORMAL OPERATION AFTER INSTALLATION.

Testing of the TEST A FIRE release device/control panel is independent of, and shall in no way be interpreted as an alternative method of, testing of the fire alarm system, motorized operator and/or any other system component employed on the fire door or counter fire door installation. All system components shall be tested as per respective manufacturers procedures.

MAINTENANCE REQUIREMENTS

The TEST A FIRE release devices have been designed to require a minimum amount of system maintenance when installed and used in accordance with factory specifications. The unit has been designed and tested for use in indoor locations. The Cookson Company recommends weekly testing of the unit, but test intervals shall ultimately be subject to criteria established by the Final Authority Having Jurisdiction (AHJ).

Serviceable fuses are provided for the following:

See Figure 3 for fuse locations and the trouble shooting guide at the rear of this manual for further information..

Fuses

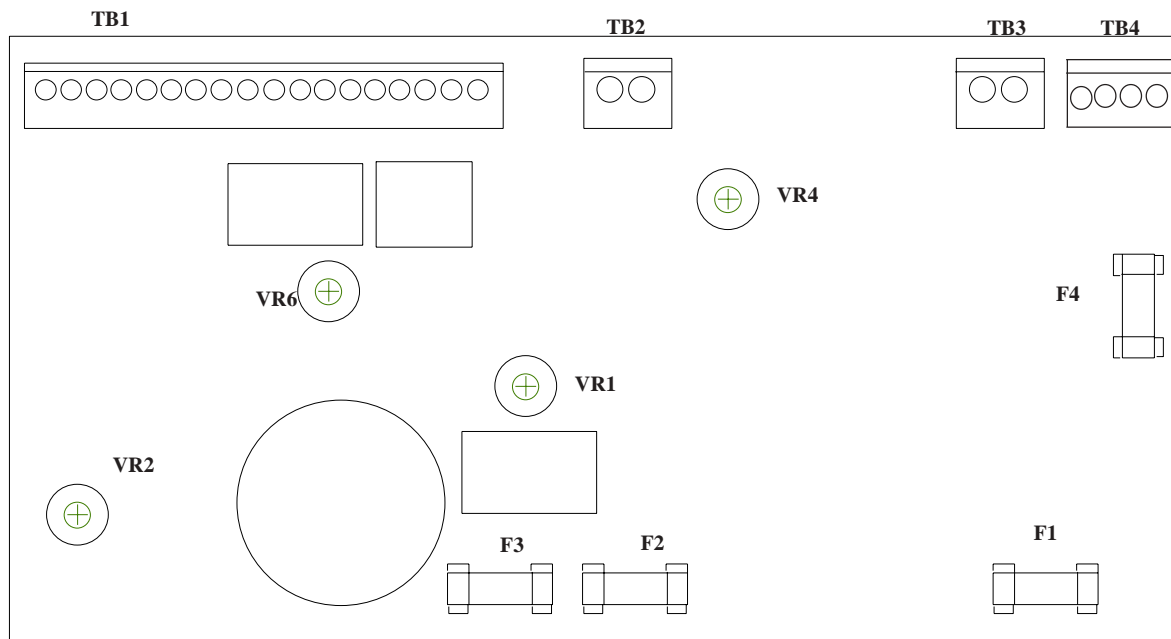
- F1 1A @ 250V, 2AG Fast Acting, Input Power
- F2 1A @ 250V, 2AG Fast Acting, Logic/Aux. Power
- F3 1A @ 250V, 2AG Fast Acting, Battery
- F4 1A @ 250V, 2AG Fast Acting, Motor Sense

Replacement fuses shall be of equivalent rating and type may be ordered directly from the factory thru the technical support number provided below.

Should servicing of fuses be required, personnel authorized to perform such maintenance shall ensure that; a) all traffic is prohibited through door opening, b) door is mechanically released and fully closed, c) all power is disconnected from unit including motor sense voltage on motorized doors.

After servicing equipment as required, unit shall be tested and witnessed for proper operation as described in the **TEST PROCEDURES** contained herein.

FIGURE 3



NOTES/TEST RECORDS

Copy this sheet and attach to manual for additional test data as required. Maintain test records in a secure location for future reference.

Serial Number _____

TEST DATE	PERFORMED BY	WITNESSED BY	COMMENTS
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ADDENDUM

01/01/96

TEST A FIRE TROUBLESHOOTING GUIDE

Verify that desired options are available on unit before troubleshooting. Refer to pages 2 & 2A for electrical connection information and the maintenance and service page of this manual for fuse locations. Troubleshooting shall be performed by factory authorized personnel only. Service and/or installation by unauthorized personnel shall void warranty. Review the following guide prior to requesting technical support. If technical support is required, unit serial number (found on front of manual and inside unit), as well as distributor who supplied unit must be supplied.

SYMPTOM

POSSIBLE TROUBLE

- | | |
|--|---|
| 1. Red Power LED does not light. | A) Primary power source turned off.
B) Loose connection on TB5
C) Incorrect polarity on D.C. unit
D) Incorrect power source applied. Verify voltage and check fuse F1. |
| 2. Green Battery LED does not light & trouble sounder stays on. | A) Battery leads not connected or leads may have bad connector.
B) Battery connected using incorrect polarity. Red (+) Black (-). Check fuse F3
C) Battery threshold circuit requires adjustment. Call Tech Support!
D) Battery totally discharged. Replace battery. |
| 3. Amber Disable LED does not light | A) Motor control voltage not connected to TB3
B) Motor control is D.C.. Check polarity.
C) Control voltage is above 30V. Check fuse F4. |
| 4. Unit goes into alarm as soon as power is applied | A) Alarm loop is not connected properly to TB1.
B) Alarm loop which is not being used must have jumper or resistor installed. If using N/C loop (TB1-2&3), resistor must remain in TB1-4&5, etc. |
| 5. Annunciator does not shut off when door meets down limit. | A) Aux. down limit switch not connected properly.
B) If using N/O down limit TB1-1&16, jumper must remain in TB1-1&18. |
| 6. Unit closes door before optional voice message is complete. | A) Alarm delay must be lengthened to accommodate message. Call Tech Support! |
| 7. Unit does not respond to manual test button. | A) Unit is detecting down limit. Make sure Aux. down limit is connected properly. If N/O down limit is used, N/C loop (TB1-1&18) must have jumper installed.
B) Possible defective switch. Call Tech Support! |
| 8. Unit does not shut off motor and mechanical release after 3 cycles. | A) Aux. Up Limit not connected or connected improperly. Aux. limit switch must toggle before open limit of operator. Proper switch sequence is required for cycle count. Jumper must remain in 8&9 when using 8&13.
B) Aux. Up Limit is not dry contact. Switching of voltage onto cycle count loop will result in immediate damage. |
| 9. Green L.E.D. turns on and off as expected when battery is installed or removed, but trouble sounder stays on. | A) Auxiliary power fuse F2 is blown. Measure TB2 for presence of 12VDC (13-14.8VDC).
B) Damaged Aux. Power Reset switch. Measure across switch (0V normal). If 12VDC is present, switch is stuck open.
C) Optional remote test plate is not connected properly or is not being used. If the test plate is not being used, the jumper must remain between TB2-2 & TB4-1. |

UNIT SERIAL NUMBER _____ DISTRIBUTOR _____

TECHNICAL SUPPORT (602) 272-4244 9AM - 5PM EST MON-FRI