GENERAL DESCRIPTION:

The The Cookson Company “FIREFLY II” Series Time Delay Release Devices are U.L. Listed, Canadian Listed, and CSFM Listed for use on rolling doors, single-slide and center parting level and inclined track doors. All models are normally energized Fail-Safe Releasing Devices incorporating state of the art electronic control circuitry. The FIREFLY II Series Release Devices respond to emergency conditions generated by manual or automatic normally closed initiating devices and shall be used in conjunction with a temperature fuse link system.

The FIREFLY II Series Release Device *features include separate adjustable time delays for alarm and power loss, motor voltage sensing, form-C relay output, proximity/door edge input and trouble diagnostic capabilities. FIREFLY II/IIB can be wired for two or four wire configuration. *Check model label on unit to be installed to verify applicable features.

CAUTION: Review all installation instructions, procedures, 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.

Fail-safe operation can only be provided with input power applied. DO NOT install this unit without fuse links.

TEST SYSTEM AT LEAST ONCE EVERY 90 DAYS TO ASSURE PROPER OPERATION.

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

The following installation procedures must be followed to assure performance of the release device to factory standards.

SECTION A. MOUNTING PROCEDURE (Figure 3)

1. The release device shall be mounted on a vertical surface with chain end link exiting side of enclosure as illustrated in figure 3. The unit may be rotated 90 degrees CW for a direct vertical pull.

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 (DO NOT install this unit without fuse links), turnbuckles] shall be installed as per door manufacturers recommendations (figure 3 typical installation configuration). Note should be taken that the end link direction of pull is perpendicular to the enclosure side. An eyebolt installed at a distance of 18 to 24 inches from the release device should adequately redirect sash chain pull as illustrated in figure 3.

4. Complete hardware installation by connecting fuse links, sash chain, S-hooks and turnbuckles as 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 slack by adjusting turnbuckle. Do Not exceed 40 lbs. maximum pull rating on release device.

SECTION B. Smoke Detectors.

When installing smoke detectors with this unit refer to NFPA 72-1993 and NFPA 80, for instructions concerning proper placement and detection coverage. End of line devices (relays) must be installed in accordance with U.L. 864. See electrical connections figure 4.

SECTION C. ELECTRICAL CONNECTIONS - All models (Figure 4)

Installation of all wiring and connections shall be performed in accordance with, but not limited to, the latest NFPA, U.L. and N.E.C. standards. 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, wiring gauge related to power capacity requirements and circuit length and wiring methods.

The following wiring instructions will configure the unit for independent delay on alarm and power loss. Four wires, two for input power and two for the initiating loop, are required. When installing this unit where only two wires are available, call tech support. This unit can accommodate a two wire installation.

1. Turn off power supply before beginning.
2. Verify voltage rating of release device to power source being utilized.
3. Connect power source inputs to TB3, screws 1 & 2. On 24vdc units observe proper polarity by placing positive (+) wire to screw 1. TB3 screw 3 shall be utilized for earth ground where applicable.
4. Normally closed initiating devices (smoke detectors) - remove jumper from screws 1 & 2 (Alarm loop will not function if jumper is not removed). Connect wiring from N/C initiating device alarm loop to TB1 screws 1 & 2 (see NFPA 72-1993 and NFPA 80 for proper placement of smoke detectors). NOTE: Alarm loops cannot be series or parallel connected between TB1 of multiple release devices. Contact tech support for wiring instructions where multiple doors must close from a single initiating device.

OPTIONS: FIREFLY II/B-X only.

Motor voltage sensing - This option is used to detect the presence of operating voltage on motor driven units where closings are automated by a fire alarm signaling source in conjunction with the operator. When motor control secondary voltage is present (24V-30V AC or dc) the release device logic will prevent the solenoid from energizing on alarm, thereby allowing the motor to drive the door closed by activation from the automated fire alarm signaling source through the operator. CAUTION: The automated signaling source and/or the motor operator shall contain logic capable of determining whether the door has fully closed upon activation. In absence of full closure, the motor control voltage shall be interrupted to release device allowing for release device initiated closure. CAUTION: DO NOT use this option on non-automated installations where door closings through the motor can only be initiated manually.

Continued on page 3 2
* Actual configuration may differ. This unit may be rotated 90 degrees CW for a vertical pull. See door manufacturer recommendations and NFPA 80 for use of this product with specific door. **DO NOT** install this unit without fuse links.

* Transformer used on 120VAC models only.
**DOOR EDGE (Lower limit/Proximity switch)** - This option interfaces to electrical contact type lower limit sensing devices and/or magnetic proximity type switches. If the electrical contact has toggled states from its N/O condition to a closed condition (TB1-5&6) indicating the door edge has made contact with desired down position, the release device logic will prevent the solenoid from energizing on alarm, thereby eliminating any damage which may result to the door from the release device attempting to close the already lowered door. **This option only works as long as power is available to unit.**

**TROUBLE RELAY (TB1-8,9&10)** The trouble relay toggles immediately upon a power loss or alarm condition and may be used for turning on signalling appliances (horns, strobes, etc.) or other external signalling functions requiring a dry contact open or closure. Figure 4 illustrates contacts with no power to unit. With power applied TB1-9&10 are closed and toggle in alarm and power loss.

Verify that motor voltage is off before continuing.


* Note: Electrical loop 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.

Verify all connections made within unit. Close hinged cover and secure screw on lid after all connections are made.

**DO NOT LEAVE COVER OPEN AFTER CONNECTIONS ARE MADE!**

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**"FIREFLY II" SERIES RELEASE DEVICE ELECTRICAL AND MECHANICAL CHARACTERISTICS**

**OPERATING VOLTAGES**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>OPERATING VOLTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIREFLY II-24DC</td>
<td>24VDC +/- 5%</td>
</tr>
<tr>
<td>FIREFLY II-24AC</td>
<td>24VAC +/- 10%</td>
</tr>
<tr>
<td>FIREFLY II-120AC</td>
<td>120VAC +/- 10%</td>
</tr>
</tbody>
</table>

**CURRENT REQUIREMENTS**

<table>
<thead>
<tr>
<th>MODELS II &amp; IIB</th>
<th>SUPERVISORY</th>
<th>ALARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIREFLY-24DC</td>
<td>0.050A</td>
<td>0.075A</td>
</tr>
<tr>
<td>FIREFLY-24AC</td>
<td>0.100A</td>
<td>0.075A</td>
</tr>
<tr>
<td>FIREFLY-120AC</td>
<td>0.050A</td>
<td>0.075A</td>
</tr>
</tbody>
</table>

* NOTE: Inrush current shall not exceed 3 times rated 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 (MAXIMUM CONTACT RATING)**

2A/15Vdc 30 Watt DC Resistive Load Only

**FUSE RATINGS- ALL FUSES**

.75 AMP @250V
2AG FAST ACTING TYPE

**MECHANICAL-LOAD RATING**

Support and release: 40LB. MAXIMUM

**DIMENSIONS**

7 1/2" x 8" x 4" (H x W x D)
ELECTRICAL CONNECTIONS - FIGURE 4

FOUR WIRE - INDEPENDENT ALARM & POWER LOSS DELAYS
Refer to Section C - Electrical Connections pages 2&3 for complete wiring instructions

FIGURE 4A - TWO WIRE/SINGLE DELAY

Refer to Section C - Electrical Connections pages 2&3 for complete wiring instructions
(1) Dotted line indicates factory jumper which must be removed when connecting the N/C device.
(2) See NFPA 80 and NFPA 92-1993 for proper placement.
(3) Verify input voltage to model being used.
(4) Maximum loop resistance 100 ohms.
(5) Jumper must remain installed for two wire installation.
(6) Jumper must remain installed if not using this option.
(7) All fuses 3/4 A @ 250V, 2AG Fast Acting
(8) End of line relay as per U.L. 864
Installation of all wiring and related connecting hardware must be performed in accordance with 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.
SECTION D. TEST PROCEDURES

TO BE PERFORMED BY FACTORY AUTHORIZED PERSONNEL ONLY! THE COOKSON COMPANY RECOMMENDS WEEKLY TESTING OF ALL RELEASE DEVICE EQUIPMENT. TESTING SHALL BE WITNESSED FOR PROPER OPERATION.

Follow step A for electronic testing of the FIREFLY II-A-X. Step B refers to the FIREFLY II-B-X with motor sense and door edge options. Step C power loss test may be performed on both models II and IIB. Testing does not affect normal operation of alarm system when connected to release device. Testing and normal operation can only be accomplished with power applied to unit. When power is applied to unit under test the Power LED (red) will be lit on the bottom of the release device.

CLEAR FIRE DOOR OPENING AND PROHIBIT ALL TRAFFIC THROUGH DOOR OPENING DURING TESTING OF SYSTEM!

Door must be in open position with power applied to unit to begin testing.

A) 1. Depress and continue to hold test button on side of release device (figure 1). After factory adjusted 10 second alarm verification (10 sec. delay) device will release door. Release test button.
2. Reset and raise door, then reset release device 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.

B) 1. Interrupt (turn off) power to motor operator. Make sure door is fully raised.
2. Note that Motor Sense/Lower Limit LED (amber) is off on side of release device indicating power is off to motor and/or door is raised. Depress and continue to hold test button on side of release device (figure 1). After factory adjusted 10 second alarm verification (10 sec. delay) device will release door. Release test button. *Leave door in the closed position.
3. Reset door, then release device 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. Verify that Motor Sense/Lower Limit LED (amber) is lit indicating power is present at the motor and/or “the door is closed”. Depress and continue to hold test button on side of release device for 10 seconds. Active Motor Sense/Lower Limit logic will prohibit the release device from energizing. Release test button.
5. Raise door to its fully open position. Note that the Motor Sense/Lower Limit LED is now off.
6. Turn on power to motor operator.
7. Verify that “Motor Sense”/Lower Limit LED (amber) is lit indicating “power is present at the motor” and/or the door is closed. Depress and continue to hold test button on side of release device for 10 seconds. Active “Motor Sense”/Lower Limit logic will prohibit the release device from energizing. Release test button.

C. Power Loss Test.

1. Make sure door is in the fully open position. Turn off “all” power to release device (including motor control voltage when used on the model IIB). After approximately 10 seconds of continuous power loss, a mechanical release will be initiated.
2. Reset and raise door, then reset release device 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.

After completing all tests, make sure door is in its normally open position and all power required for normal operation is restored to unit. This unit is designed to operate with power applied.

REMINDER:
Testing of the "FIREFLY II" release device 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. TESTING SHALL BE PERFORMED AND WITNESSED FOR PROPER OPERATION.
FIREFLY II/IIB TROUBLESHOOTING GUIDE

Verify that desired options are available on unit before troubleshooting. Refer to 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

1. Red Power LED does not light.

POSSIBLE TROUBLE
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. Red LED is on, but unit does not release door after alarm or power loss delay.

A) N/C Alarm loop is not connected properly to TB1. Remove wires from TB1, 1 & 2. Continuity test on wires should be zero ohms (short) back to initiating device. Place smoke detector in alarm and verify that dry contacts open on alarm.
B) Unit is detecting down limit (Model B only). If Down Limit feature is not being used, jumper must remain in TB1, 6 & 7.
C) Load on release mechanism exceeds 40lbs. Remove sash chain and test with manual test button for proper release.
D) Damaged unit. Call tech support.

3. Amber Disable LED does not light (Model B)

A) Motor control voltage not connected to TB2
B) Motor control is D.C.. Check polarity.
C) Control voltage is above 30V. Check fuse F2.

4. Red LED is on, unit does not respond to manual test button, but works in alarm.

A) Test button is not being depressed long enough. Depress button continuously for the 10 second delay. Unit must be powered up for a minimum of 15 seconds before testing.
B) Unit is detecting down limit (Model B only) Make sure Aux. down limit is connected properly. If N/O down limit is used, N/C loop (TB1-6&7) must have jumper installed.
C) Possible defective switch. Call tech support.

5) Unit blows fuse when power is applied

A) Incorrect power applied. Check unit label. Measure supply voltage.
B) Unit has sustained damage from transient voltage. Call tech support.

UNIT SERIAL NUMBER___________________ DISTRIBUTOR___________________

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

The "FIREFLY II/IIB" release devices have no scheduled maintenance requirements. 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 5 for fuse locations.

Fuses
- F1 3/4A @ 250v, 2AG Fast Acting, Logic Board Power Supply
- F2 3/4A @ 250v, 2AG Fast Acting, Motor Sense Input, MODEL IIB ONLY
- F3 3/4A @ 250v, 2AG Fast Acting, Power Input

Replacement fuses 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 thru 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 *SECTION D- TEST PROCEDURES*, contained herein.

**FIGURE 5**
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.

UNIT SERIAL NUMBER: ________________________

<table>
<thead>
<tr>
<th>TEST DATE</th>
<th>PERFORMED BY</th>
<th>WITNESSED BY</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>

