INSTRUCTIONS FOR 84-800 SYSTEM
TOP LEVEL PART #: 84-800
TOP LEVEL DWG #: 103530
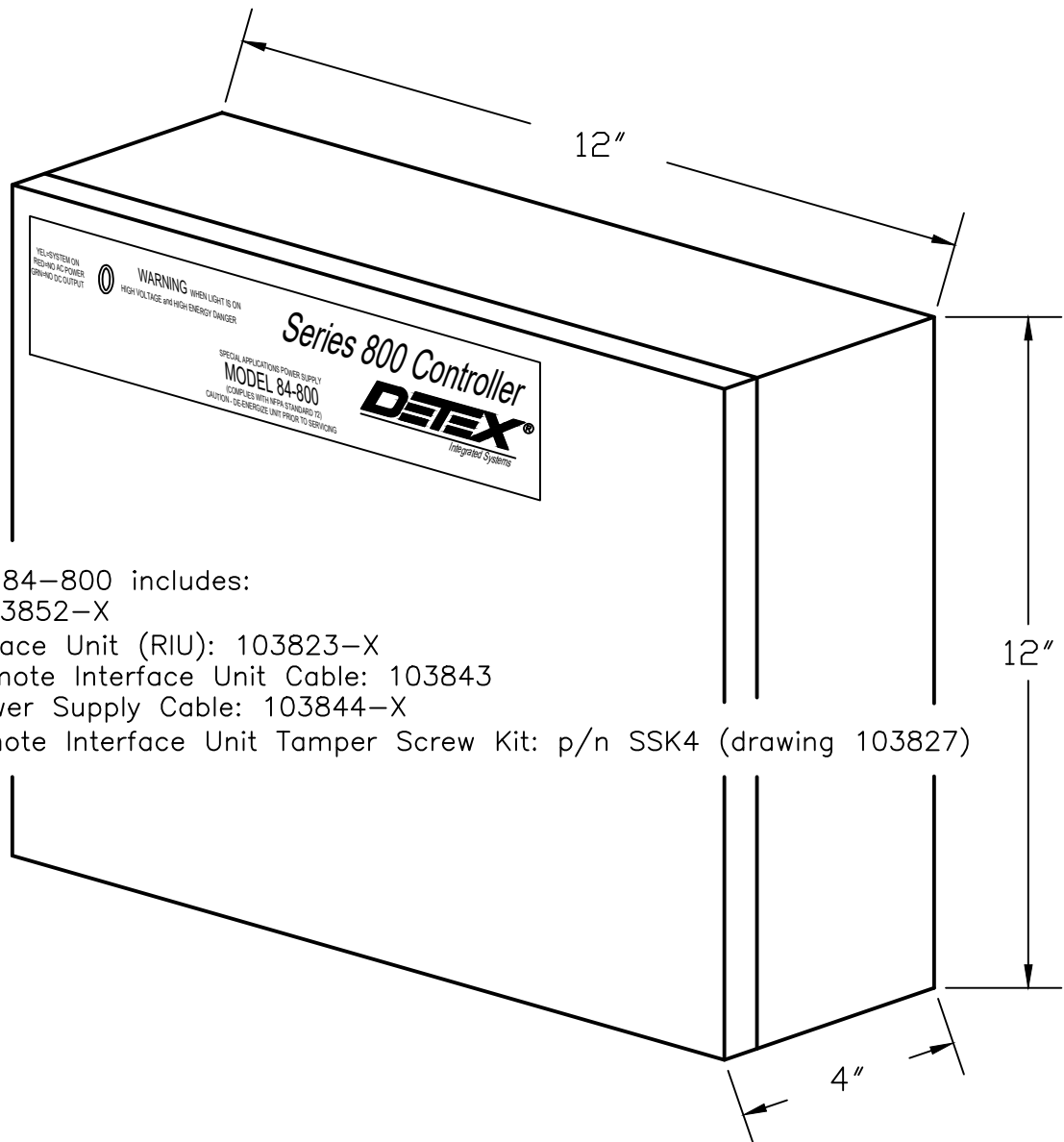
Part number 84—800 includes:
Controller: 103852—X
Remote Interface Unit (RIU): 103823—X
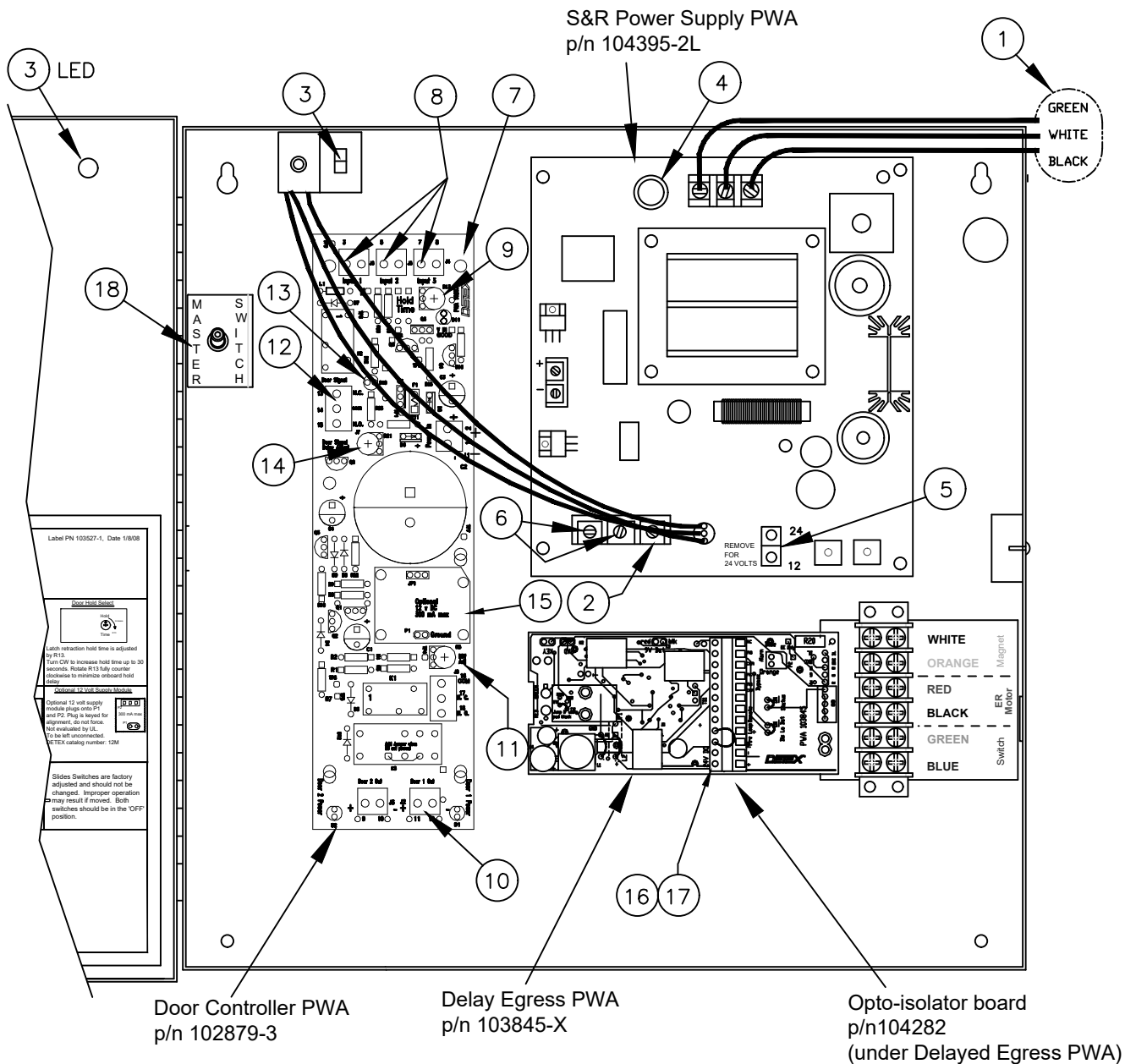EExER to Remote Interface Unit Cable: 103843
EExER to Power Supply Cable: 103844—X
Optional: Remote Interface Unit Tamper Screw Kit: p/n SSK4 (drawing 103827)

84-800 CONTROLLER / POWER SUPPLY

Description of use:
For use with single door Delayed Egress
with Latch Retraction devices (EExER)
Input requirements 120v @ 1 amp

Diagram labels:

- ③ LED
- ③ (main power switch)
- ⑧ ⑦
- S&R Power Supply PWA p/n 104395-2L
- ④
- ① GREEN / WHITE / BLACK
- ⑨
- ⑱
- MASTER SWITCH
- ⑬
- ⑫
- ⑭
- Label PN 103527-1, Date 1/8/08

Door Hold Select
Hold Time
Latch retraction hold time is adjusted by R13. Turn CW to increase hold time up to 30 seconds. Rotate R13 fully counter clockwise to minimize onboard hold delay.

Optional 12 Volt Supply Module
Optional 12 volt supply module plugs onto P1 and P2. Plug is keyed for alignment, do not force. Not evaluated by UL. To be left unconnected. DETEX catalog number: 12M
300 mA max.

Slides Switches are factory adjusted and should not be changed. Improper operation may result if moved. Both switches should be in the 'OFF' position.

- ⑥
- ⑤
- REMOVE FOR 24 VOLTS   24   12
- ②
- ⑮
- WHITE / ORANGE / RED / BLACK / GREEN / BLUE
- Magnet
- ER Motor
- Switch
- ⑪
- ⑯ ⑰
- ⑩

Door Controller PWA p/n 102879-3

Delay Egress PWA p/n 103845-X

Opto-isolator board p/n104282 (under Delayed Egress PWA)

DETEX Model 84-800
Connection Diagram and Instructions

WARNING! DEVICE MAY CYCLE WHEN FIRST POWERED UP. KEEP HANDS AND FINGERS CLEAR OF MOTOR AND CAM.

MAIN POWER PANEL

The 84-800 is a controller / power supply. The power supply boards are configured for 24VDC.

Refer to the appropriate drawing for connections and adjustments. All connections and adjustment must be made with the power supply de-energized **AND** main power switch (item 3) in the OFF position.

1: MAIN POWER CONNECTION.
Observe correct terminal connections. Color code requires connections made per NFPA72. Leave circuit de-energized while installing and servicing unit.

GREEN
WHITE
BLACK
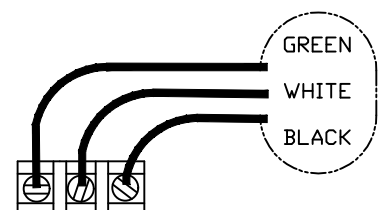
2: FIRE LOOP CONTROL.

Connect the two wires from the building fire system relay to these terminals. The power supply will operate normally as long as the connection between the (-) and (C) is maintained. When the building fire alarm system opens the circuit, the power supply de-energizes the output voltage. The fire loop uses 24 volt sense voltage.
**NOTE: Each power supply should have an independent fire alarm relay.**

+ - C

Closed fire alarm loop.
Must be supplied.
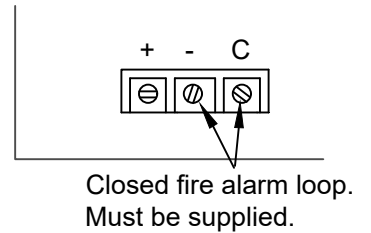
3: MAIN ON-OFF SWITCH.

This switch can be used to de-energize the power supply for service and adjustments. High voltage is still present inside the enclosure as long as the main power feed is energized, so caution should still be used when service is performed using this switch.
I = ON, O = OFF

Yellow LED = SYSTEM OK
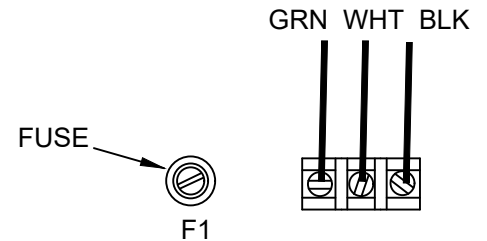Green LED = NO DC OUTPUT
No LED = No AC input
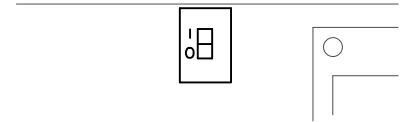
4: 1.5 AMP TIME DELAY FUSE (5 x 20mm).

This is intended to protect the device against high current loads and is part of the AC input circuit.
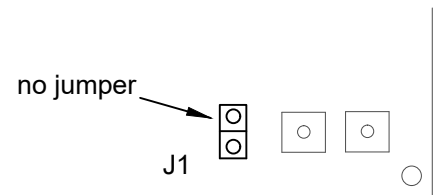Detex p/n is 104267-2.
Bussman p/n is GMD-1.5A
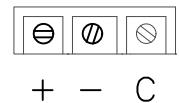Littlefuse p/n is 023901.6HXP

GRN WHT BLK

FUSE

F1

5: OUTPUT VOLTAGE.

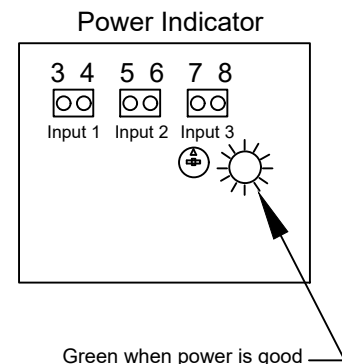Factory set for 24volts.

no jumper

J1

6: OUTPUT TERMINALS are pre-wired at factory.

+ — C

DOOR CONTROLLER PWA

7: POWER GOOD INDICATOR.

This LED will glow green if 24 volts is supplied to the controller board.

Power Indicator

3 4 5 6 7 8
Input 1 Input 2 Input 3

Green when power is good

Control Inputs

8: ACCESS CONTROL INPUTS.
These require a normally open dry contact. The door latch will activate and hold once the circuit between the terminals of inputs 1, 2 or 3 is made.

3 4	5 6	7 8
Input 1	Input 2	Input 3
N.O. Switch	N.O. Switch	N.O. Switch

Door Hold Select
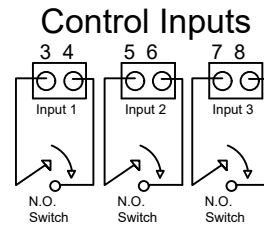
9: DOOR HOLD DELAY ADJUST.
This potentiometer adjusts the length of time the latch is held retracted once the input switch is released. Turn clockwise to increase the latch hold time up to a maximum of about 30 seconds. **TROUBLESHOOTING INFO: When adjusted to minimum, latch retraction may not function properly.**
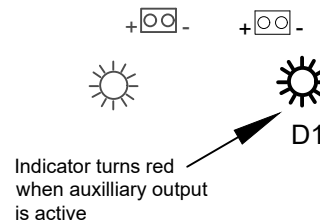
Hold Time — R13 — Increase
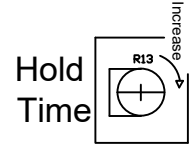
Auxiliary Output Indicator

10: AUXILIARY OUTPUT INDICATOR.
D1 glows red when the auxiliary output is active.

Indicator turns red when auxilliary output is active — D1

Door 1 Output Indicator

11: DOOR 1 OUTPUT ACTIVITY INDICATOR.
D2 glows red when the output voltage to the latch retraction device is energized.

Indicator turns red when door is active — D2
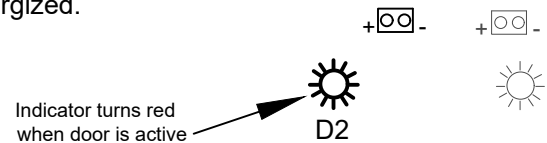
Door Operator Signal

12: DOOR OPERATOR.
Jumper J7 is connected to a relay. It can be used to signal a door opener or other device that the latch is retracted. It is delayed and goes active after the latch retraction occurs.
The amount of the delay is .5 to 3 seconds and is adjusted by Item 14.

D10

Door Signal
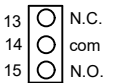
Terminals are connected to a SPDT dry contact relay

Terminal 13 is normally closed
Terminal 14 is common
Terminal 15 is normally open

13	N.C.
14	com
15	N.O.

13: DELAY EGRESS TO LATCH RETRACTION DIFFERENTIAL ADJUST.
R5 is used to adjust the delay between the delay egress release and ER latch retraction. The delay is factory adjusted and should work correctly for most applications. The delay is adjustable from .25 to 1 second by R5. This is factory set and should not require adjustment. If a longer delay is needed, turn R5 clockwise.
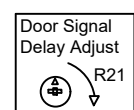
R5 — Diff. Adj.

Door Operator Signal Delay

14: DOOR OPERATOR DELAY ADJUST.
R21 is a potentiometer that adjusts the delay between the latch retraction & the operator signal. Turn clockwise to increase this delay.

Door operator signal is triggered after latch retraction and time is adjustable from 0.5 to 3 seconds

Door Signal Delay Adjust — R21

15: OPTIONAL 12 VOLT POWER MODULE.
An optional 12 volt power supply module is available where a 12 volt DC source is needed in addition to 24 volts. See the kit instructions for more information. 300 mA max current draw. (Not evaluated by UL)

Optional 12 Volt Supply Module

Optional 12 volt supply module plugs onto P1 and JP1. Plug is keyed for alignment, do not force. **Order DETEX catalog number: M12**
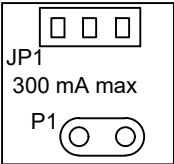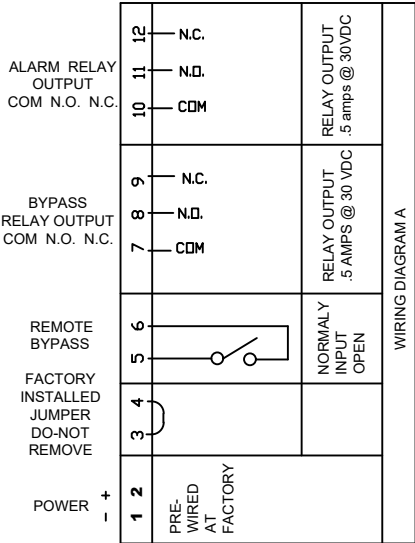
JP1

300 mA max

P1

WARNING! DEVICE MAY CYCLE WHEN FIRST POWERED UP
# KEEP HANDS AND FINGERS CLEAR OF MOTOR AND CAM

DELAYED EGRESS CONNECTION BLOCK

16: BYPASS RELAY OUTPUT: (7, 8, and 9)
The BYPASS relay output is energized when the unit is disarmed by the KEY or REMOTE BYPASS to indicate to a remote indicator that the door is not armed.

17: ALARM RELAY OUTPUT: (10, 11 and 12)
The ALARM relay output is energized when the unit is sounding its alarm to indicate to a remote indicator an unauthorized exit has been attempted.

ALARM RELAY OUTPUT COM N.O. N.C. — 12 N.C. / 11 N.O. / 10 COM — RELAY OUTPUT .5 amps @ 30 VDC

BYPASS RELAY OUTPUT COM N.O. N.C. — 9 N.C. / 8 N.O. / 7 COM — RELAY OUTPUT .5 AMPS @ 30 VDC

REMOTE BYPASS — 6 / 5 — NORMALY INPUT OPEN

FACTORY INSTALLED JUMPER DO-NOT REMOVE — 4 / 3

POWER + / − — 2 / 1 — PRE-WIRED AT FACTORY

WIRING DIAGRAM A

18: MASTER SWITCH.
This switch is intended for service and setup use. When it is set to"ON" the LED tip will glow red. This indicates the delayed egress and exit alarm are set to normal control and function. When set to "OFF", the delayed egress and alarm functions are bypassed and the LED tip will glow green.

Master — ON / OFF — Alarm
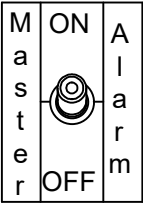
19. DELAYED EGRESS CIRCUIT BOARD.
There is an arming delay of 15 seconds (other times are factory optional) between the unit being placed in the armed state and the delay egress becoming active.

NOTE:
18 AWG wire is recommended for power circuits.
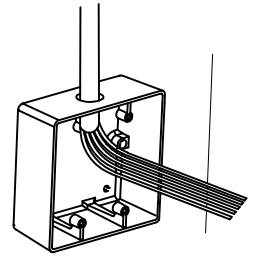22AWG wire is recommended for signalling circuits.

REMOTE INTERFACE
INSTALLATION INSTRUCTIONS

① Mark Box Location:
(surface installation shown)

Mark (4) holes
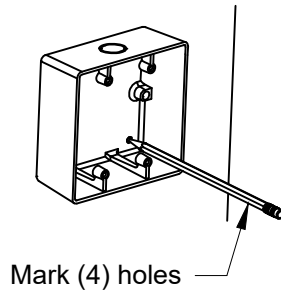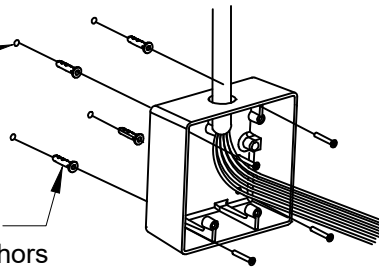
② Pick best knockout location for routing wires.
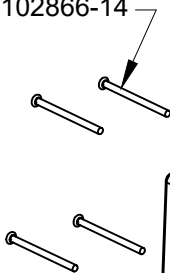
③ Route wires through knockout.

④ Mount box

Recommended drill size for anchors: 1/4 diameter

Press-in wall anchors

BACK BOX MUST BE GROUNDED PER NFPA 70

#6-32x1-1/2"
Machine screw
P/N: 102866-14

Cover
P/N: 105430-1 (Gray), 105430-2 (Black)

#4-20x1-1/4" Plastite screw (qty 3)
P/N: PP-5374-48

Tamper bracket
P/N: 102701

#4-20x1-1/4" Plastite screw (qty 1)
P/N: PP-5374-48
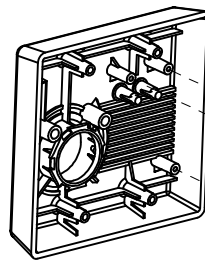
Cylinder nut
P/N: 100783

RIU Circuit board kit
P/N: 105083

Cam assembly kit
P/N: 102660-1

#8-32 Truss HD screw
P/N: 102627-15

NOTE: Switch and cam assembly not used with dummy cylinder.

Ground Strap
P/N: 104448

Figure 1. Parts breakdown depiction

⑤ ASSEMBLE the REMOTE INTERFACE (103823-X)

5a Remove cam assembly from cover

Unfasten
(3) screws

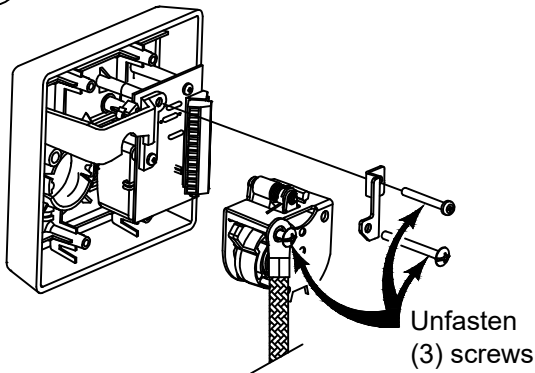**5b** Install mortise or dummy cylinder with cylinder nut provided (standard Yale cam)

Cam
orientation
as shown
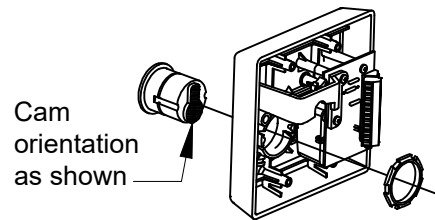
5c Re-install cam assembly
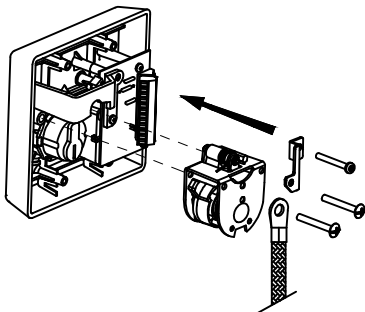
5d Install wiring functions (Table 1)

Terminal Block and key cylinder switch

See next page for color code and proper connection
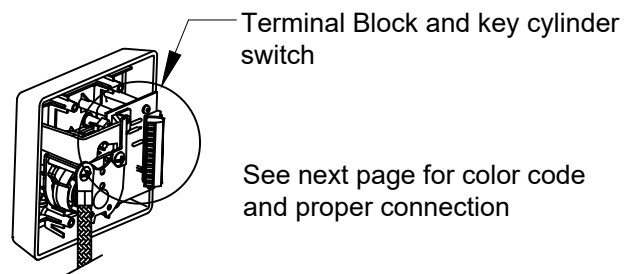
⑥ KEY STOP INSTALLATION (if required) - Optional

(Key stop set screw included in hardware kit)

Install key stop

Rotate key to this position before reinstalling cam assembly
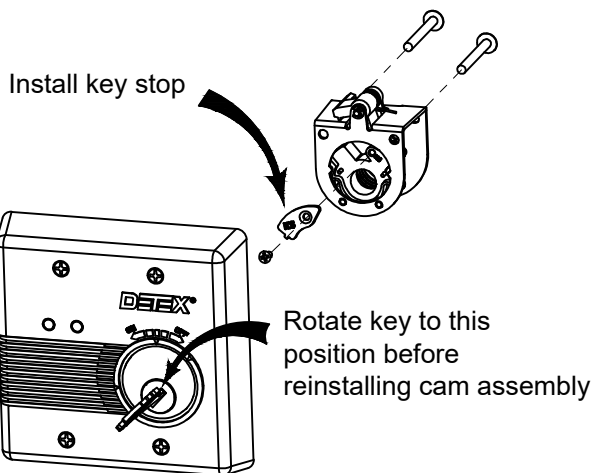
Hardware Kit
P/N: 103824
Includes Keystop parts
P/Ns: 105770-1 (KS), 105770-2 (KS2),
& screw P/N 101976-1
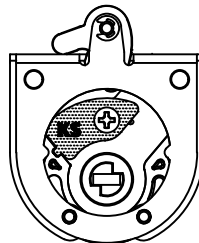
KS shown
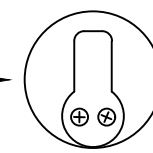
KS used with standard Yale style cam
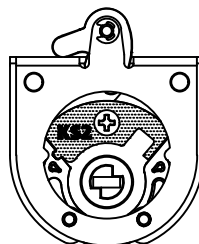
KS2 shown
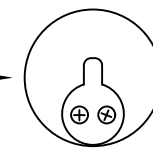
KS2 used with Adams Rite small style cam
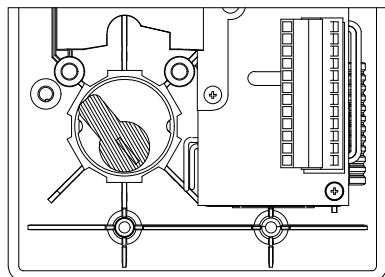
Cam orientation
for Key Stop option

Back View

Front View
KEY STOP POSITIONS

"ON" position
(Key can be removed)
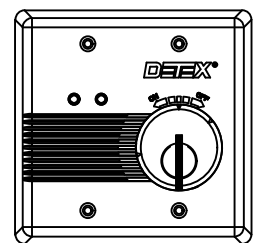
Key shown in
90° stop "ON" position

"OFF" position
(Key cannot be removed)
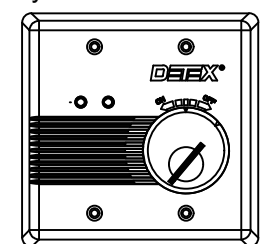
Key shown
in "OFF" position

⑦

Remote Interface Unit

R1
Green LED Vcc

R2

Red LED Vcc   L2

S2 (ON/OFF)

White Cylinder
Blue Horn −
Brown Horn +

Loop Monitor

Black   Ground

JP1   1 ... 12

Slide S2 to "ON" for use with key cylinder

Slide S2 to "ON" for use with key cylinder, "OFF" for use with dummy cylinder
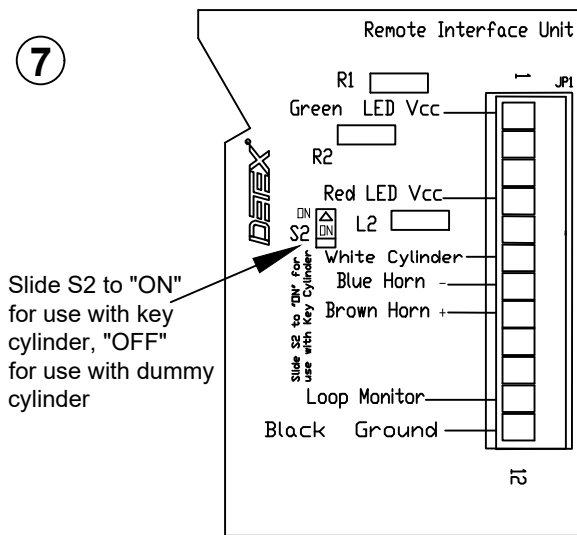
RUI circuit board kit
p/n 105083

SELECT S2 POSITION
(if required)

Units may come with slide switches or shunts.

Shunt shown in ON position, both terminals are covered by the shunt. For an OFF position, it is recommended to install the shunt on a single terminal to prevent misplacing the shunt. Pull the shunt straight off to change it's position.

GREEN LED Vcc
Slide S2 "ON" for use with key cylinder
RED LED Vcc
WHITE CYLINDER
BLUE HORN −
BROWN HORN +
LOOP MONITOR
BLACK GROUND
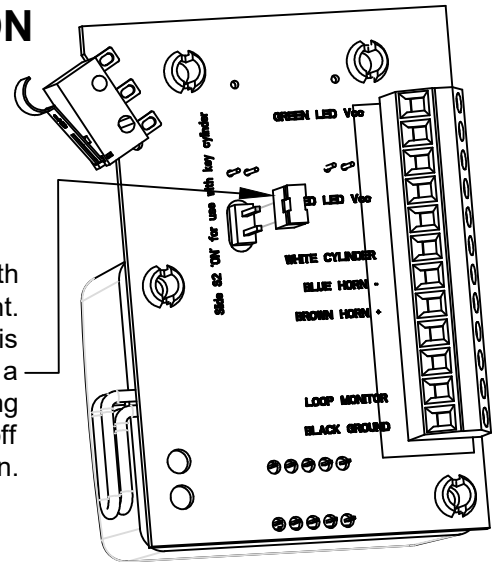
⑧ CONNECT WIRES FROM CABLE TO TERMINAL BLOCK

6 Pin Plug to Remote Interface

6 Conductor cable from power supply to Remote Interface terminal strip

ground strap from cable (must be connected)

Back box MUST be grounded by conduit or other means

WHITE
ORANGE
RED
BLACK
GREEN
BLUE

Power Supply

Grounding strap: supplied with device

Grounding wire required. Minimum 10 ga stranded wire NOT SUPPLIED

EExER Device

6 Pin Plug to Power Supply

Pigtail provided for pre-wired installations

Power Supply Cable
Default 1 ft, p/n 103844
Optional for 20 ft, p/n 103844-2

Table 1 Wiring connections for Remote Interface Module		
Terminal Block	Functions	Wire Color
1	Green LED Control	Green
2	N/U	
3	N/U	
4	Red LED Control	Red
5	N/U	
6	Key Cylinder Input	White
7	Horn (-)	Blue
8	Horn (+)	Brown
9	N/U	
10	N/U	
11	N/U	
12	Ground	Black

Terminal Block Connections

⑨ VERIFY GROUND STRAP CONNECTION

Grounding strap:
supplied with device
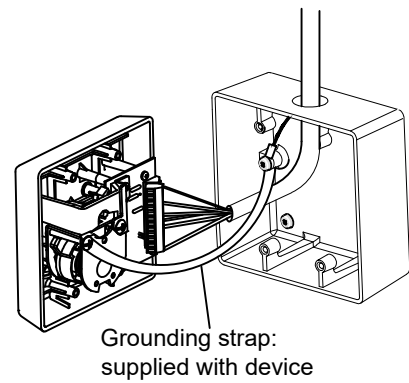
⑩ Install device with (4) #8-32 machine screws

6-32 Screws from Hardware Kit
(Tamper Screw kit P/N: SSK4)

Detex supplied or use
Red Dot box
Part no: Red 2IH3-1

SURFACE

Detex supplied
or use a standard
4" x 4" x 2-1/2"
double gang outlet
box

FLUSH
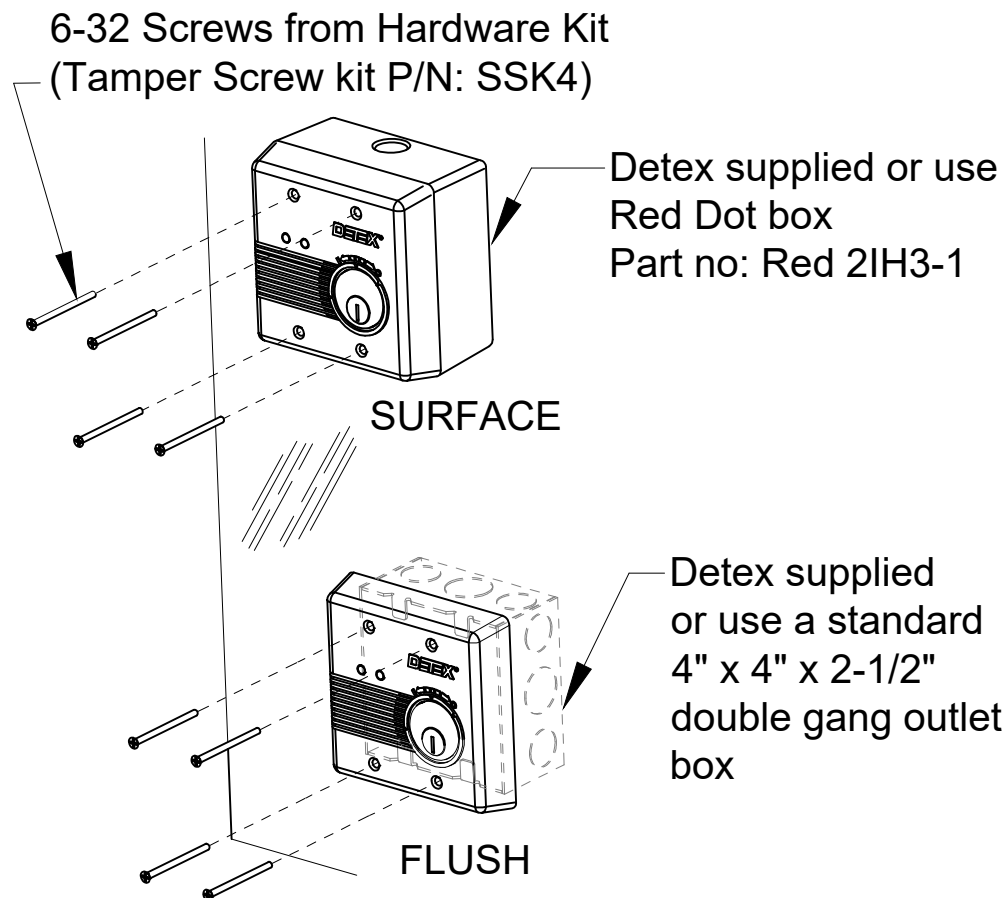
NOTE: The Electric Latch Retraction (ER) function is operated by an external entry/exit control device (such as card reader) that is connected to the power supply. Install per Manufacturers instructions.

DELAYED EGRESS OPERATIONS

Home Position:
Key can only be removed at 12 o'clock

To Arm (on):
Rotate key to 8 o'clock
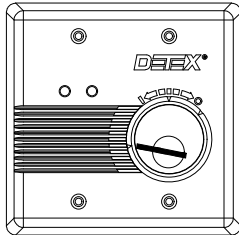
To disarm (off):
Rotate key to 2 o'clock position

With **Key Stop** installed,
key only rotates between 12 & 2 o'clock:

Key at 2 o'clock disarms
Key at 12 o'clock arms
Key can only be removed with unit armed

ARMING AND AUTHORIZED EXIT

With the door closed, insert key in the cylinder of the remote interface, turn CCW, then back to home key position and remove. Two red LED flashes occur, then green LED glows. Authorized personnel can exit the door during this rearm cycle. After a 15-second arming period, alarm issues three quick beeps and LED goes off, indicating the unit is armed (see table 3 for status options).
**If a key cylinder is not used, the device is set to an armed state by default and only the three system control inputs on the ER control board (uses a normally open dry contact, closed to activate) can be used to bypass the alarm.**

DISARMING

Insert key, turn CW to a stop. Green LED will blink twice to indicate the unit is disarmed, (see table 3). Device will operate as a normal exit device. If the key cylinder is not used, closing the contacts of one of the three system control inputs will activate the latch retraction mechanism and bypass the alarm. **Upon release of the input contact, the latch will release, and the 15 second arming delay timer will start. The unit will issue three beeps, indicating the unit is now armed.**

EXITING UNDER ALARM

To exit, push and maintain pressure on the pushpad. After a one second delay, (nuisance delay), LED flashes RED and alarm pulses on and off for 15/30 (not field programmable). After 15/30 seconds, alarm issues short and long pulses to indicate that one can exit by depressing the pushpad. Alarm sounds continuously and LED is steady red. Turn key CW to stop alarm or initiate authorized access. In case of fire, the fire alarm over-rides the 15/30 second delay and the door opens without delay when pushpad is pushed. The alarm will not sound since the power to the system is turned off in response to the fire alarm.

RESETTING THE ALARM

Turn key CW to reset the alarm. See the arming procedure above to rearm the device. If the key cylinder is not used the alarm must be reset by using one of the three system control inputs on the ER control board. The latch will retract and the alarm will turn off. Upon release of the system control input contact & retract time, the unit will start the 15 second arming delay timers, and will automatically rearm at the end of that time. In case of fire, the fire alarm overrides the 15 or 30 second exit delay and the door opens when the pushpad is pressed. The alarm will not sound since the power to the system is turned off in response to the fire alarm.

NUISANCE DELAY

When pushpad is depressed for less than 1 second, alarm will emit a single pulse but will not start delay function.

NORMAL OPERATION

TABLE 3

LED COLOR		SIREN SOUNDS	FUNCTION
RED	GREEN		
OFF	ON	THREE CHIRPS	Indicates the unit is in process of arming. The siren will chirp three times to indicate the unit is armed and green LED will turn off
SLOW BLINKING	OFF	SLOW PULSE	Pushpad is depressed, delay to open started
FAST BLINKING	OFF	FAST PULSE	Delay to open expired, door unlocked
ON	OFF	ON	Delay to open expired, door has been opened
SHORT BLINK (3 SEC)	OFF	OFF	Unit is armed.
OFF	SHORT BLINK (3 SEC)	OFF	Unit is disarmed.

RISER DIAGRAMS AND POWER TRANSFER OPTIONS

DETEX 84-800 FILTERED AND REGULATED POWER
SUPPLY WITH FIRE ALARM SYSTEM LOOP

PROVIDE WIRING CONDUIT, CONNECTOR,
ETC BETWEEN DETEX 84-800 POWER
SUPPLY AND FIRE ALARM CONTROL PANEL
AS REQUIRED TO ALLOW THE FIRE ALARM
SYSTEM TO OVERRIDE THE DETEX DELAYED
EGRESS FEATURE DURING A FIRE ALARM

DETEX REQUIRES THE POWER SUPPLY BE
LOCATED WITHIN 15 FEET OF THE DEVICE

THE LOSS OF POWER OR OPEN FIRE
ALARM CIRCUIT ELIMINATES DELAYED EGRESS

REFER TO WIRING & FIRE ALARM
DIAGRAMS FOR WIRING INSTRUCTIONS

GROUNDING WIRE REQUIRED
MINIMUM 10 GA STRANDED WIRE

DETEX SUPPLIED CABLES
RECOMMENDATION FOR OTHERS:
MIN. 22 GA WIRE FOR SIGNALING
MIN. 18 GA WIRE FOR POWER

DOOR SIGN SUPPLIED
WITH DETEX DELAYED
EGRESS PANIC
HARDWARE

PUSH UNTIL ALARM SOUNDS
DOOR CAN BE OPENED IN 15 SECONDS

REMOTE INTERFACE MAY BE
SURFACE MOUNTED OR
RECESSED

IF CYLINDER IS USED, MOUNT
APPROPRIATELY.
IF CYLINDER NOT USED, MOUNT
8' TO 10' HIGH

NOTE:
Access control
not shown

DETEX DELAYED EGRESS PANIC HARDWARE
INSTALLED BY TRAINED TECHNICIAN

EXIT DEVICE WILL VARY DEPENDING
ON CONFIGURATION

TROUBLE SHOOTING

Problem	Probable cause
No exit delay, alarm does not pulse.	No power to/from power supply; no fire loop connection.
No green light when key is turned CCW.	Check connections on cables.
No exit delay, alarm pulses.	Magnet wires not connected to circuit board.
Latch fails to retract	Increase door hold release R13 (item 9)
Device motor fails to complete cycle	1. Increase door hold release R13 (item 9). 2. Check eye bolt adjustment. (See delay device instructions)
Delay egress does not arm	On RIU device, if using a dummy cylinder, S2 must be set to "OFF"

For further assistance, contact Detex Technical Support at 1-800-729-3839