

# ES4600 Installation/Configuration Instructions

ES460 CONVERSION TABLE	
ES460	ES4600
Red & Black	TS1-11&12
Violet Pair	TS1-7&8
Green Pair	TS2-16&21
w/Jumper across	TS2-18&19
White Pair	TS3-1&2

**TAMPER DISABLE** (Disables Tamper Switch)  
**ON** Disable  
**OFF** Enable

**DOOR SUPERVISION** (See Reverse for more detail)  
**ON** Door Contact w/ Supervision  
**OFF** Non-Supervised Closed-Loop Door Contact

**VOLTAGE SENSE** (Function select for TB1-3&4 Voltage Sense\*)  
**ON** Fail Safe (Normally Energized / Mag Lock)  
**OFF** Fail Secure (Normally De-energized/Door Strike)  
 \*NOTE: If the Voltage Sense Input is not used, leave Jumper OFF.

**SHUNT CONTACT** (N/O-N/C select for TB1-1&2 Dry Contact Shunt\*)  
**ON** N/O Input  
**OFF** N/C Input  
 \*NOTE: If TB1-Dry Contact Shunt is not used, leave Jumper ON.

**SHUNT RECYCLE** (Allows a Shunt Input to reset Silent Time Timer during Door Prop Warning Alarm)  
**ON** Enabled  
**OFF** Disabled  
 (See Reverse for more detail)

## JUMPER SETTINGS

**Bold (ON/OFF) = Factory De-**

**Verify each jumper's configuration, even if that function is not used. "Voltage Sense" and "Intrusion Detect Enable" settings are often misplaced in applications without access control devices.**

**INTRUSION DETECT ENABLE** (Enable detection of a Forced Door\*)  
**ON** Enabled  
**OFF** Disabled  
 \*NOTE: If used to only detect a Propped Door, leave Jumper OFF.

**RESERVED** (Factory Diagnostic Use only.)  
**OFF**

**SHUNT DELAY TIMER** (Valid User Reset Timeout)  
 • SHUNT DELAY is the reset timeout after a valid input, **PRIOR TO OPENING THE DOOR.** (Green LED duration)  
 • Set jumpers at, or greater than, "Lock Time."  
 • See "SILENT TIME" for setting the access time allowed **AFTER** the door is opened by a valid user.

Jumpers S-0 & S-1		S-0	S-1	
OFF	OFF	0	Seconds	
ON	OFF	5	Seconds	
OFF	ON	10	Seconds	
ON	ON	20	Seconds	

**EXTENDED SILENT TIME** (See "Silent Time Select" Table for details)  
**ON** Enables Extended Silent Time Delay (up to 90 Minutes)  
**OFF** Normal Silent Time Delay (up to 2.5 Minutes)

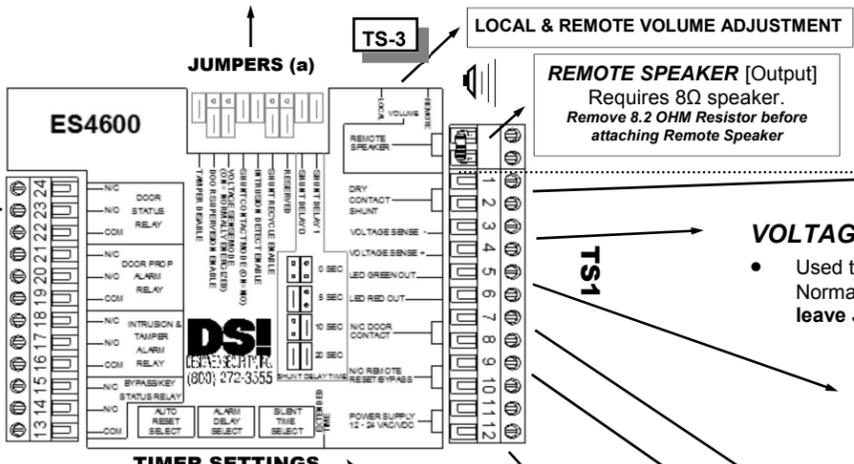
## TS-2 RELAY OUTPUTS

**DOOR CONTACT STATUS** Pins 22 (C), 23 (N/O), 24 (N/C)  
 • This output follows the status of the Door Contact Input on TS1.  
 • This may be used for remote monitoring equipment requiring a N/O or N/C Dry Contact Input (Form C).

**DOOR PROP ALARM STATUS** Pins 19 (C), 20 (N/O), 21 (N/C)  
 • This output changes state when the ES4600 goes into Alarm mode due to a door held open for a time exceeding that set on Silent Time and Alarm Delay combined, or when Power is lost.  
 • This may be used for remote monitoring equipment requiring a N/O or N/C Dry Contact Input (Form C).

**INTRUSION/TAMPER ALARM STATUS** Pins 16 (C), 17 (N/O), 18 (N/C)  
 • This output changes state when the ES4600 goes into Alarm mode due to a Forced door, Tamper or Door Supervision violation, or Power loss.  
 • This may be used for remote monitoring equipment requiring a N/O or N/C Dry Contact Input (Form C).

**BYPASS/KEY SWITCH STATUS** Pins 13 (C), 14 (N/O), 15 (N/C)  
 • This output changes state when the Key Switch, or Remote Bypass Input on TS1 change state. (N/O closes and N/C opens)  
 • This may be used for remote monitoring equipment requiring a N/O or N/C Dry Contact Input (Form C).



## TS-1

• *Italicized* = Optional  
 • Underlined = Required

**SHUNT INPUT** (1&2) [Input]  
 • Connect to a Dry Contact input from REX, Motion Sensor, or Access Control system. Associated with Shunt Contact Jumper, to select N/O or N/C input. DSI's ES440 Pushbutton may be used as a REX device, with a faceplate painted to match the ES4600.

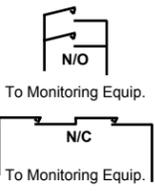
**VOLTAGE SENSE** (3&4) [Input] 12-24 VAC/DC  
 • Used to monitor Lock Voltage as a Shunt Input. (See Voltage Sense Mode Jumper.) Select Mag Lock/ Normally Energized (Jumper ON) or, Door Strike/Normally De-Energized (Jumper Off). **If not used, leave Jumper OFF.**

**REMOTE L.E.D.** (5&6) [Output]  
 • Controls a remotely mounted Bi-Color LED. These contacts reverse polarity, dependent upon device status. Output follows Front Panel LED.  
 • DSI's ES440 Pushbutton or ES450 Key Switch, with the Bi-Color LED, may be used with this output, and the Bypass Input, opposite a door, or in any remote location (Guard Station, etc.) to control and annunciate the Bypass Status of the ES4600.  
 • This pair of contacts provide a DC output which reverses polarity when the Front Panel LED changes state.

**DOOR** (7&8) [Input]  
 • Connect to Dry Contact at door which is a closed loop when the door is closed. This Input is monitored by the 4600 to initiate timer, alarm, and reset functions.  
 • If the Door Supervision Jumper is ON, refer to detail on reverse for placement of 1K Ohm Resistors.  
 • If Supervision is not required, remove the jumper.

**BYPASS** (9&10) [Input]  
 • Remote Reset/Bypass Input. This duplicates the Key Switch at a remote location. A N/O Dry Contact closure activates this function.  
 • It is often used to provide remote control at a guard station, or at the opposite side of a doorway from the ES4600.  
 • DSI's ES440 Pushbuttons and ES450 series Key Switches (with Bi-Color LED) are well suited for this application, and come painted to match.

**ADDITIONAL OUTPUT INFORMATION**  
 • Each of the Output functions offers the availability of monitoring a Normally Open or a Normally Closed Dry contact.  
 • Each contact's state will change to follow the status of the monitored function.  
 • To combine multiple outputs, connect N/O contacts in parallel, or N/C contacts in series. See diagrams at right. The use of any/all Outputs is optional.  
 • DSI's ES600 (4/8/12) Zone Annunciator series, and Custom Annunciator Panels, offer a turn-key solution for remote monitoring. (such as Security, Nursing, or Management stations, etc.)  
 • If Power is removed from the ES4600, each contact in it's normal state (powered), will change state. Example: Door Status will appear as if the door has been opened; Alarm and Bypass contacts will appear as if an alarm or bypass condition exists.



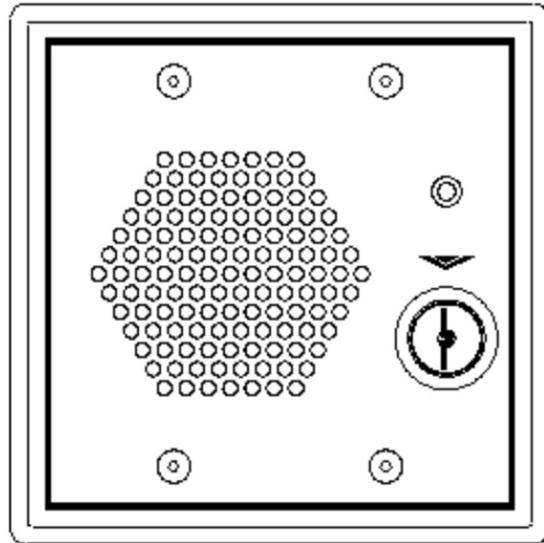
**AUTO RESET**  
 This sets the amount of time the Alarm message will continue to play after the Door has been closed. See Table on reverse for more complete information.

**ALARM DELAY**  
 This sets the amount of time the Alarm message will continue to play after the Warning Alarm. Set this to a reasonable amount of time for the users to complete passage. **EXTENDED SILENT TIME** Jumper is associated with this setting. See Table on reverse for more complete information.

**SILENT TIME**  
 This sets the amount of Silent Time which will elapse prior to sounding the Door Prop Warning Alarm. Set this to a reasonable amount of time for the users to complete passage. **EXTENDED SILENT TIME** Jumper is associated with this setting. See Table on reverse for more complete information.

## TIMER SETTINGS

**FOLLOW THE STEP BY STEP  
CONFIGURATION FOR EASY**



**ES4600-K1**

**DESCRIPTION**

The ES4600 may be integrated with Access Control systems, or applied as a stand-alone solution for propped or forced doors, and plays a factory-installed Voice messages as local annunciation of violations.

Inputs include the ability to monitor Lock Voltage (12-24 VAC/DC) and a Dry Contact (N/O or N/C) as a Shunt Input, a Remote Bypass/Reset/Key Switch via a N/O Dry Contact, and a Closed-Loop Door Contact.

Outputs include Door Contact Status, Door Prop Alarm Status, Intrusion/Tamper Alarm Status, and Bypass/Key Switch Status. Each Output offers a Common, a N/O and a N/C Dry Contact to connect to remote monitoring equipment.

In addition, an LED output can be used to power a remote Bi-Color LED which follows the Front Panel LED status. LED is Red when armed, and Green when access is granted. (ES450 Series Key Switch w/ Bi-Color LED is suggested for Remote LED applications)

The ES4600 can easily be configured in the field to meet the needs of most door management applications by moving Jumpers and setting Timing functions.

**STEP BY STEP**

Locate and identify **TS1, TS2, TS3, Jumpers, Timing Switches, LED, Tamper and Key Switches.**

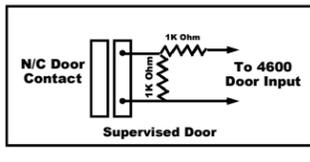
**Jumpers:** ON= short 2 pins; OFF= one pin only.

Default jumper setting is in **bold**.

- Is **TAMPER SWITCH** required?
  - A) If not, Jumper remains **ON**.
  - B) If so, place Jumper OFF to enable switch.
- Is **DOOR SUPERVISION** required?
  - A) If so, place Jumper on and place resistors at door switch as shown in diagram (below right).
  - B) If not, leave Jumper **OFF** and use a N/C Dry Contact for a Door Switch.

**DOOR SUPERVISION EXPLAINED**

Door Supervision allows the ES4600 to monitor the circuit from the Door Contact for open or shorted wires which may indicate tampering. (via 2 1KΩ resistors installed as shown)



- Will **VOLTAGE SENSE** be used to monitor Lock Power as a valid access input on TS1 (3&4)?
  - A) If not, Jumper must be **OFF**.
  - B) If so, will the lock be Normally Energized (Jumper ON); or, Normally De-Energized (Jumper **OFF**)?
- Will **SHUNT INPUT** be used to provide a Dry Contact input for each valid access to TS1 (1&2) ?
  - A) If not, Jumper must be **ON**
  - B) If so, Jumper is **ON** for N/O; OFF for N/C input.
- Is **INTRUSION DETECTION** required?
  - A) If so, Jumper must be **ON**
  - B) If Door Prop monitoring only, Jumper is OFF and LED will always be Green.
- Is **SHUNT RECYCLE** required?
  - A) If so, Jumper is **ON**
  - B) If not, Jumper is **OFF**

**SHUNT RECYCLE EXPLAINED**

- Normally (Jumper OFF), a Remote Bypass (TS1-9&10) or a Key Switch (Front Panel) Input is required to reset the Door Prop warning condition in default mode.
- When **Shunt Recycle** is Enabled (Jumper ON), a Shunt Contact, or Voltage Sense Input will Recycle the Silent Time Timer during the time the message is playing. This will return the unit to Quiet time for another cycle. This gives the User the ability to Prop the door indefinitely, by providing additional valid inputs each time the Warning message plays.

- The **SHUNT DELAY TIMER** setting determines the time the LED will be Green after an input on TS1 (1&2; 2&3; 9&10 or Key Switch). This timer works only if Intrusion Detection is enabled. If TS1 (7&8)Door input is not opened within this time, the unit will reset. See table on opposite page for settings duration detail.

**STEP BY STEP** (continued)

SEE TIMER SETTINGS TABLE, BELOW RIGHT

- **SILENT TIME SELECT** begins after the door is opened by a valid user and has two ranges selected with the **EXTENDED TIME Jumper**;
  - A) 0 seconds to 2.5 minutes (Jumper **OFF**)
  - B) 3 minutes to 90 minutes (Jumper ON)
  - C) After selecting appropriate range, turn dial to **SET #** that matches the Silent Time desired for your application.
- **ALARM DELAY SELECT** begins after the expiration of the Silent Time, and a warning message plays. (Std.- "Please close the door")
  - A) Turn dial to **SET #** that matches the duration you want this message to repeat before the unit triggers Door Prop output relay and Alarm message plays. (Std.- "Security violation, Close the door")
- **AUTO RESET TIME SELECT** begins when Alarm Delay Select time has expired AND Door Contact input (TS1-7&8) has not closed. This is the minimum amount of time the "Security violation, Close the door" message will continue to play.
  - A) Turn the dial to **SET #** that matches the duration appropriate for your application

**TIP! Unused Features must be set appropriately for your application.**

ELECTRICAL SPECIFICATIONS				
	VOLTS	AMPS	N/O	N/C
Power	12-24 VAC/DC	250mA	N/A	
Voltage Sense	12-24 VAC/DC	15mA	N/A	
Shunt Input	Dry Contact		Jumper Selectable	
Bypass Input	Dry Contact		√	
Door Input	Dry Contact			√
Output Relays	Dry Contact	1 Amp@ 30 VDC	√	√
Aux. Speaker	3 Watts @ 8 Ohms			

MECHANICAL SPECIFICATIONS	
•	The ES4600 -K1 mounts flush in a 3.5" deep, 2-Gang electrical box.
•	ES4600-K3 and -K4 (RIM hardware) requires a 3.5" deep, 3-Gang electrical box.
•	Optional Pushbutton-equipped units mount in a 2.5" deep, 3-gang electrical switch box. See INS-DMA-PB for Pushbutton specifications. (Not available with K3; K4 key option)

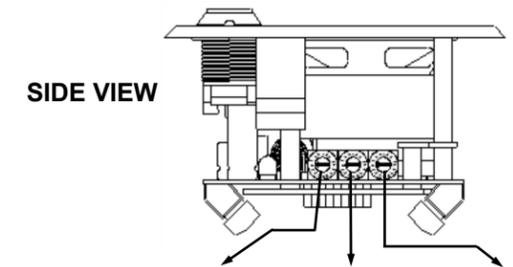
**STEP BY STEP** (continued)

OPTIONS

- Connect **BYPASS** TS1 (9&10) input, to N/O contact to Bypass or Reset the unit remotely.
- Connect **REMOTE LED** to TS1 (5&6). Connection detail on opposite page. (Bi-color, two lead LED)
- Connect **OUTPUT RELAYS** on TS2 to Monitoring Equipment, see connection detail on opposite page.
- Connect **REMOTE SPEAKER** on TS3 to a remote 8 Ohm speaker. Adjust using Remote Volume control.

**TIMER SETTINGS TABLE**

For Shunt Delay Timer setting table, see Jumper Settings, on reverse.



SET	SILENT TIME SELECT (Extended Silent Time Jumper)		ALARM DELAY TIME SELECT	AUTO RESET TIME SELECT
	NORMAL Jumper OFF	EXTENDED Jumper ON		
0	0 Sec	3 Min	0 Sec	0 Sec
1	3 Sec	3.5 Min	3 Sec	3 Sec
2	5 Sec	4 Min	5 Sec	5 Sec
3	7 Sec	4.5 Min	7 Sec	7 Sec
4	10 Sec	5 Min	10 Sec	10 Sec
5	12 Sec	6 Min	12 Sec	12 Sec
6	15 Sec	7 Min	15 Sec	15 Sec
7	20 Sec	8 Min	20 Sec	20 Sec
8	25 Sec	9 Min	30 Sec	30 Sec
9	30 Sec	10 Min	45 Sec	45 Sec
A	35 Sec	20 Min	1 Min	1 Min
B	45 Sec	30 Min	2 Min	2 Min
C	1 Min	40 Min	3 Min	3 Min
D	1.5 Min	50 Min	4 Min	4 Min
E	2 Min	60 Min	5 Min	5 Min
F	2.5 Min	90 Min	INFINITE	MANUAL