

## TUS-WKS Installation & Operating Instructions

### Introduction

TUS-WKS Digital Keypads offer Wiegand output for universal compatibility with access control systems or the Digital Keypad Controller. The 3x4 illuminated keypad features a flush-mount stainless steel faceplate.

**Keypads are shipped in 'Wiegand mode' from the factory. When interfacing with the device, please change the keypad to 'Character mode' and ensure that 'Character' is selected in the Programming Tool. The advanced programming features available in Character mode allow a user to customize the operation to fit the specific needs of their installation. Instructions on how to change from Wiegand to Character mode are found in the *Changing to Character Mode* section below.**

### Box Contents

Keypad with mounting hardware pack  
Installation & Operating Instructions  
Surface Mount Wall Box  
Flush Mount Wall Box  
16' of wire

### Specifications

#### Power Selection

12V or 24V DC @ 100mA max

#### Environmental

Operating temperature: -10° to 140°F (-23° to 60°C)

Storage temperature: -10° to 150°F (-23° to 65°C)

Humidity: 0% to 95% relative humidity

### Installation

The keypad can be installed using one of two wall boxes; a surface mount wall box or a flush mount wall box. Note that it can be used outdoors with the optional rain cover which will allow mounting in outdoor locations not directly exposed to rain or snow. Additionally, when used outdoors a weatherproof gasketed wall box is recommended.

Note that the surface mount wall box must be used for the tamper feature to operate properly. Once the keypad is wired per the wiring diagram in the *Wiring* section of this document, gently install the spring onto the push button switch with the tapered side of the spring facing downwards towards the PCB. The spring will allow the tamper feature to operate with the surface mount wall box.

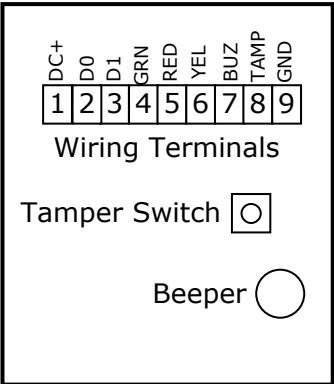
Surface Mount Wall Box

- Separate the wall box cover and base.
- Remove the rectangular knockout in the center of the base only if the tamper switch will not be used.
- Drill an opening in the wall through which the wires will be routed.
  - If using the tamper switch, drill a hole for the wires ensuring the hole will not interfere with the operation of the push button tamper switch.
- Mount the base onto the wall over the wire opening using the supplied metal screws and plastic anchors.
- Mount the keypad to the cover using tamper resistant #6 screws (*recommended*) or #6 conventional screws. Program the unit prior to securing in place.
- Pull wires through the wall/center of the base and connect to the DK-38 wiring terminals per instructions in the *Wiring* section of this document.
- Push the wall box cover onto the base until it snaps into place.

Flush Mount Wall Box

- Cut out an opening in the wall into which the box will be mounted.
- Route wiring through one of the four knockouts in the back of the box.
- Push the box into the wall and secure in place using the two swing clamps.
- Connect wires to the keypad wiring terminals per instructions in the *Wiring* section below. Program the unit prior to securing in place.
- Mount to the box using tamper resistant #6 screws (*recommended*) or #6 conventional screws.

Wiring



Each terminal is provided with a marking for easy reference.

Wiring Terminal Connections

Terminal	Wiring Reference	Suggested Wire Color
DC+	Positive DC supply lead	Red
D0	Wiegand data zero	Green
D1	Wiegand data one	White
GRN	Green light	Orange
RED	Red light	Brown
YEL	Yellow light	Blue
BUZ	Audible buzzer	Yellow
TAMP	Tamper indicator	Purple
GND	Ground	Black

Note that suggested wire color for 'YEL' terminal is BLUE and suggested wire color for 'BUZ' terminal is YELLOW

Feedback and Entry Overview

The DK-38 comes with LED indicator lights above the keypad; green, yellow, and red. These three indicator lights and the backlight provide feedback during operation. When the DK-38 is in Wiegand mode there is no yellow feedback light when connected to an access controller. The yellow light is designed to work with the DKC Digital Keypad Controller. The three indicator lights are intended for operation through an access controller either through a dry-contact connection to ground or an open-collector driver. Please refer to the access controller for information about the meaning of the indicator lights. The table below is only for use with DKC controller.

INDICATOR	ACTION	MEANING
Red Light	Single Flash	<ul style="list-style-type: none"> <li>While in programming mode an error was made during program entry; or</li> <li>A 5 second timeout occurred at any time during a programming step.</li> </ul>
Red Light	Double Flash	<ul style="list-style-type: none"> <li>While in programming mode a confirmation that a valid program entry was made; or</li> <li>During normal operation the DK-38 was put into or taken out of lockout mode.</li> </ul>
Red Light	Continuously On	<ul style="list-style-type: none"> <li>During normal operation the relay is energized while the DK-38 is in relay timer mode.</li> </ul>
Red Light	Continuously On	<ul style="list-style-type: none"> <li>While in normal operation the DK-38 is in passage mode; or</li> <li>The DK-38 is in toggle mode and the relay is energized.</li> </ul>
Yellow Light	Continuous Flashing	<ul style="list-style-type: none"> <li>While in programming mode the light will flash once per second.</li> </ul>
Yellow Light	Continuously On	<ul style="list-style-type: none"> <li>While in normal operation this indicates that there are no codes in memory.</li> </ul>
Green Light	Single Flash	<ul style="list-style-type: none"> <li>Key press detected.</li> </ul>
Green Light	Continuously On	<ul style="list-style-type: none"> <li>While in normal mode a 30-second lockout occurred after 16 wrong digits were entered; light turns off after lockout time.</li> </ul>
Backlight	Double Flash	<ul style="list-style-type: none"> <li>While in normal mode a valid code was entered while the DK-38 was in lockout mode.</li> </ul>

**Note the table above is for use with TUS-DKC controller.**

The is provided with a beeper that can be used to indicate when a button is pressed or the relay is energized. The beeper functions are detailed in the table below and are valid for use with the TUS-DKC Controller. Note that when shipped from the factory there is a paper label applied to the top of the beeper. This label decreases the volume of the beeper. If more volume is needed simply remove the label from the beeper to obtain maximum volume.

INDICATOR	MEANING
Single short beep	<ul style="list-style-type: none"> <li>A button press; or</li> <li>Entry into Programming Mode</li> </ul>
Single long beep	While in normal operation: <ul style="list-style-type: none"> <li>User ID entered is greater than 65535 no transmission occurred; or,</li> <li>Six digits were entered; no transmission occurred</li> </ul> While in Programming Mode: <ul style="list-style-type: none"> <li>An error or non-acceptance of a new facility code has occurred</li> </ul>
Double beep	While in Programming Mode: <ul style="list-style-type: none"> <li>Acceptance of a new facility code in Wiegand Mode</li> <li>Changing from Wiegand to Character Mode</li> </ul>

When entering a sequence the keypad has a 5 second timeout that will erase the internal buffer when a key is not pressed within 5 seconds. For example, if the correct code is 2-2-6-7 and the user enters 2-2-6 followed by a 5 second delay and then enters 7 the keypad will not operate.

## **Keypad Operation**

TUS-WKS keypads are shipped from the factory in 'Wiegand mode' of operation. To change the facility code or mode of operation, follow the steps below:

### **Entering into Programming Mode**

1. Remove power from the keypad.
2. At the keypad, temporarily connect the 'YEL' terminal to the 'GND' terminal.
3. Apply power to the keypad and the yellow light will be on.
4. Without touching the keypad wait 5 seconds and the keypad will produce a single short beep to indicate that programming mode has been entered.

### **Change to Wiegand mode and set facility code**

1. Enter into programming mode (see above).
2. Within 30 seconds, enter a valid facility code of 1 to 3 digits in length. The code cannot be greater than 255. If more than 3 digits are entered programming mode will automatically terminate with an error.
3. Press the '\*' key and the DK-38 will beep twice. Programming mode will automatically exit.
4. Remove the temporary wire connecting the 'YEL' terminal to the 'GND' terminal.
5. Remove power from the keypad for 10 seconds.

### **Changing to Character Mode**

1. Enter into programming mode (see above).
2. Within 30 seconds press the '#' key and the DK-38 will beep twice. Programming mode will automatically exit.
3. Remove the temporary wire connecting the 'YEL' terminal to the 'GND' terminal.
4. Remove power from the keypad for 10 seconds.

In Character Mode a valid user ID must be 1 to 5 digits in length and the ID cannot be greater than 65535. If more than 5 digits are entered or if the ID entered is greater than 65535 an audible error will sound, the buffer will be cleared, and no transmission will be sent. A valid user code must be followed by pressing the '\*' key.

## **Technical Support**

For general questions concerning this or other products please visit [www.TURNSTILES.us](http://www.TURNSTILES.us) or contact Technical Support at (303) 670-109, email [patrick.mcallister@TURNSTILES.us](mailto:patrick.mcallister@TURNSTILES.us).