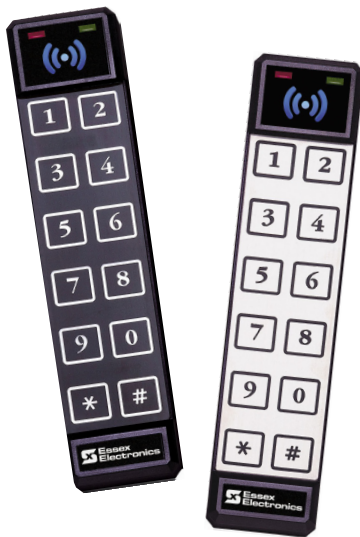


•••• T-Prox Series

Thinline 12-Pad

Wiegand Keypad/ Prox Reader

INSTALLATION & INSTRUCTION MANUAL





T-Prox Series Thinline 12-Pad Weigand Keypad/Prox Reader

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Document Information

IOMK1 Installation/Operations Manual for the T-Prox Series Thinline 12-Pad Weigand Keypad/Prox Reader - May 2013. *This documentation is also applicable to prior revisions except where noted.*

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Introduction

Overview – The T-Prox Series Keypad

The Essex T-Prox is a dual technology access control reader which combines an Essex Thinline 2x6 Keypad with HID 125 kHz Proximity. The Keypad can be configured in the field as any one of the following:

- 26 Bit Wiegand Keypad Reader
- 8 Bit Word Keypad Reader
- 4 Bit Word Keypad Reader



■ 2x6 Keypad

Keypad

Keypad Specifications

Input Voltage:	5VDC or 12 to 24VDC (Jumper Selectable)
Current Draw:	<30mA, Illuminated <100 mA
Outputs:	3 Open Collector, 1/4 A Max to Ground with 2.2K Pull-ups
Keypad Switch Life:	>1 Billion Cycles
Keypad Operating Environment:	IP66 Rated, -40°C to +70°C (-40°F to +160°F), 100% Relative Humidity

••••• Keypad

■ Keypad Specifications, cont'd.

2x6 Keypad Dimensions:	7-1/8"H x 1-3/4"W x 3/4"D (13 x 8.6 x 1.1 cm)
2x6 Keypad Weight:	4.4 oz (125 gm)
LED's:	1 Red, 1 Green
Mounting:	Surface or mullion mount

■ Keypad Part Numbers

2x6 Keypad

TPX-26I	Black Illuminated Overlay
TPX-26S	Stainless Steel Overlay

■ Keypad Configuration

Voltage Selection

The factory default setting for the Keypad voltage is 12-24VDC. Verify that the jumper is removed or placed over only one pin. For 5VDC, the jumper should be placed across both pins. If changing the voltage is necessary, make sure the power is removed first.

Keypad Reset

In certain cases you may want to restore system defaults. To perform this procedure:

CAUTION: This procedure completely erases the memory and restores factory defaults!

1. Remove power.
2. Jumper the two pins above the connector labeled "CONFIG."
3. Apply appropriate power. (You should hear 4 beeps and the RED LED will flash and the GREEN LED will be solid).
4. Once the Keypad is in configuration mode, enter 0099#. The Keypad will beep twice and both LEDs will flash for approximately 10 seconds. (During this time, the Keypad will appear dead. Do NOT remove power!)
5. Once the reset is complete, you will hear 4 beeps and the RED LED will flash and the GREEN LED will be solid.
6. Enter the configuration number followed by #.
 - a. Keypad Output

Keypad Output	Configuration	Site Code
26 Bit Wiegand (default)	1 #	000
8 Bit Word	2 #	
4 Bit Word	6 #	

6. Configuration, cont'd.

- b. To change the audible beep, enter

Code	Audible Beep
-------------	---------------------

201 #	Normal Beep (factory default)
-------	-------------------------------

200 #	Short Click (quieter)
-------	-----------------------

- c. To change the illumination, enter the code as follows:

Code	Standby Mode	Normal Operation
-------------	---------------------	-------------------------

210 #	Off (factory default)	Off (factory default)
-------	-----------------------	-----------------------

211 #	Off	Dim
-------	-----	-----

212 #	Off	Bright
-------	-----	--------

213 #	Dim	Dim
-------	-----	-----

214 #	Dim	Bright
-------	-----	--------

You should hear 3 beeps indicating successful configuration (the RED LED will continue to flash and the GREEN LED will be solid). If you hear a long error beep, re-enter the configuration number followed by #.

7. Remove power.
8. Remove configuration jumper.
9. Re-apply power.
10. RED LED on, GREEN LED off.

Prox reader is HID 125kHz with Data 0 on Green, Data 1 on White.
Prox HOLD is violet.

••••• 26 Bit Wiegand Keypad Reader

■ 26 Bit Wiegand Specifications

The All-In-One 12-Pad is capable of generating standard 26 Bit Wiegand data. DATA 1 and DATA 0 signals are open collector outputs with 2.2K pull-ups to the internal +5v. The data is sent at 1 msec per bit with a pulse duration of 50 usec. An annunciator beeps with each key press. When the LED control input is pulled low, the GREEN LED will be on and the RED LED will be off. When the input goes high the RED LED is on and the GREEN LED is off. The LED that is illuminated will blink off with every key press. The LED control input is pulled to the internal +5v with a 2.2K resistor. An output is generated with each key press, which can be used to drive a CCTV or Security Light. Located through the Blue wire (see Connector Wiring), this is an open collector output capable of sinking 1/4 A with a 30 second on time.

The following WIEGAND output is sent each time the # (enter) key is pressed:

	P	S	S	S	S	S	S	S	S	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	P	
BIT	1	2									9	10																	25	26

- BIT 1 is an even parity for the following 12 bits.
- The sum of bits 1-13 is even.
- BITS 2-9 are the SITE CODE.
- BITS 10-25 This is the number(PIN) entered prior to pressing # (enter).
- Leading 0's are added as required. Bit 10 is most significant.
- BIT 26 is an odd parity over the previous 12 bits. The sum of bits 14-26 is odd.

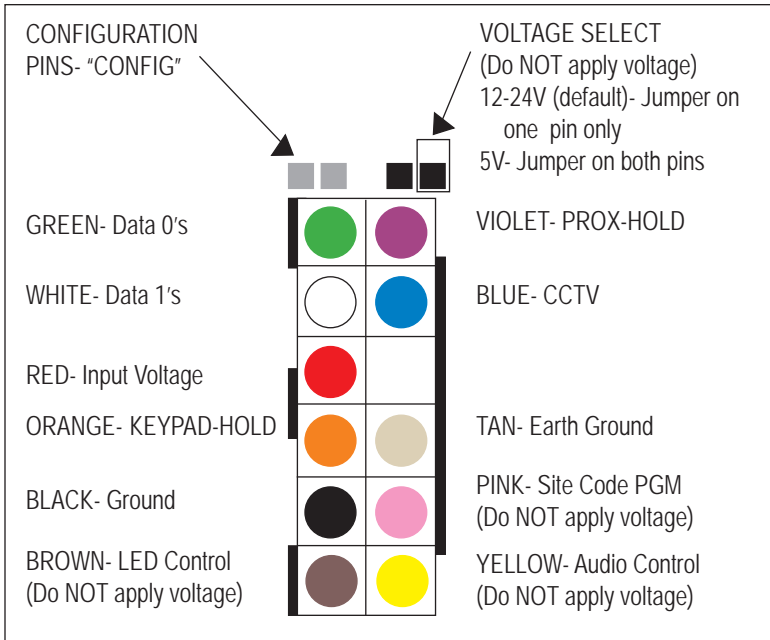
Example: Site Code of 004 and a code of 123 entered

1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 1 1 1 0 1 1 1

Note: An error code, which sends all binary 1's to your panel, is generated by any of the following:

- a. Pressing the # key with no preceding digits.
- b. Pressing any number of only 0's prior to pressing the # key.
- c. Pressing 65,535 or any number above 65,535. Do NOT program your panel to accept code number 65,535.

■ 26 Bit Wiegand Connector Wiring



PINK- Site Code Program

This Keypad is capable of having the SITE CODE programmed in the field. The PINK wire is used for this procedure.

- With no voltage applied to the Keypad, connect the PINK wire to the BLACK wire on the wiring harness. Apply the appropriate voltage to the RED and BLACK wires. You will hear 4 rapid audible beeps and both the RED and GREEN LED's will flash at the same rate.
- Enter the desired SITE CODE (between 0 and 255) on the Keypad and press # for enter. You will again hear 4 rapid audible beeps.

- At this point the Keypad will appear non-functional and will not accept any entries. (If the wrong key is pressed during the programming sequence, pressing the * key will clear the entry. You will then hear 2 rapid beeps and both LED's will flash at the same rate. The Keypad will generate an error tone if you enter a SITE CODE over 255.)

- Disconnect power to the RED wire and disconnect the PINK wire from the BLACK wire.

Now you can connect the standard Wiegand 5 wires to the Keypad and the programmed SITE CODE will be generated as part of the 26 Bit data when the enter key (#) is pressed.

This procedure may be repeated to change the SITE CODE.

The factory default site code is 000.

BLUE- CCTV

Pressing any position on the Keypad will generate a 30-second, 0.25 Amp, intermittent duty grounding output on the BLUE wire.

ORANGE- Keypad Buffered/Hold, VIOLET- Prox Buffered/Hold

When the Hold Line is pulled low, codes (card numbers) entered on the Keypad (Prox Reader) are stored in the buffer. When the Hold Line is released to a logic high, the buffered data is sent. This input is pulled high with a 2.2K resistor.

YELLOW- Audio Control

Pulling YELLOW low (grounding) causes the beeper to sound.

TAN- Case Ground

In higher static prone areas, the TAN wire is used to divert static discharge away from the microprocessor in the Keypad. Ideally, the TAN wire should be connected to a known Earth Ground or the Black wire at the Keypad installation point (Do NOT run back to the panel through the cable).

8 Bit Word Keypad Reader

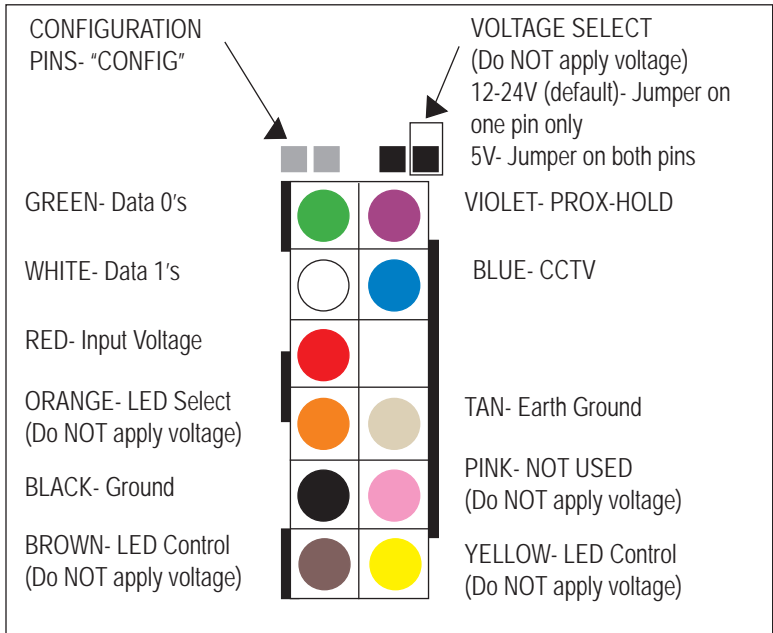
8 Bit Word Specifications

DATA 1 and DATA 0 signals are open collector outputs with 2.2K pull-ups to the internal +5V. The data is sent at 1 msec per bit with a pulse duration of 50 usec. An annunciator beeps with each key press. An output is generated with each key press which can be used to drive a CCTV or Security Light. Located through the BLUE wire (see Connector Wiring), this is an open collector output capable of sinking 1/4 A with a 30 second on time.

Each key press generates an 8-Bit sequence in the following output format:

KEY	OUTPUT	KEY	OUTPUT
0	11110000	6	10010110
1	11100001	7	10000111
2	11010010	8	01111000
3	11000011	9	01101001
4	10110100	*	01011010
5	10100101	#	01001011

■ 8 Bit Word Connector Wiring



BLUE - CCTV

Pressing any position on the Keypad will generate a 30 second 0.25 amp intermittent duty grounding output.

ORANGE - LED Control

The ORANGE wire allows the choice of controlling the RED & GREEN LED's on the Keypad with either 1 wire (BROWN) or 2 wires (BROWN & YELLOW).

ORANGE - LED Control, cont'd.

- a. When the ORANGE wire is floating (not connected), two wires control the LED's. When the BROWN wire is pulled low (grounded), the GREEN LED is on. When the YELLOW wire is pulled low, the RED LED is on.
- b. To control both LED's with one wire (BROWN), pull the ORANGE wire low. When the LED control input is pulled low, the GREEN LED will be on and the RED LED will be off. When the input goes high, the RED LED will be on and the GREEN LED will be off. The LED that is illuminated will blink with every key press. The LED control is pulled to the internal +5 with a 2.2K resistor.

TAN- Case Ground

In higher static prone areas, the TAN wire is used to divert static discharge away from the microprocessor in the Keypad. Ideally, the TAN wire should be connected to a known Earth Ground or the Black wire at the Keypad installation point (Do NOT run back to the panel through the cable).

4 Bit Word Keypad Reader

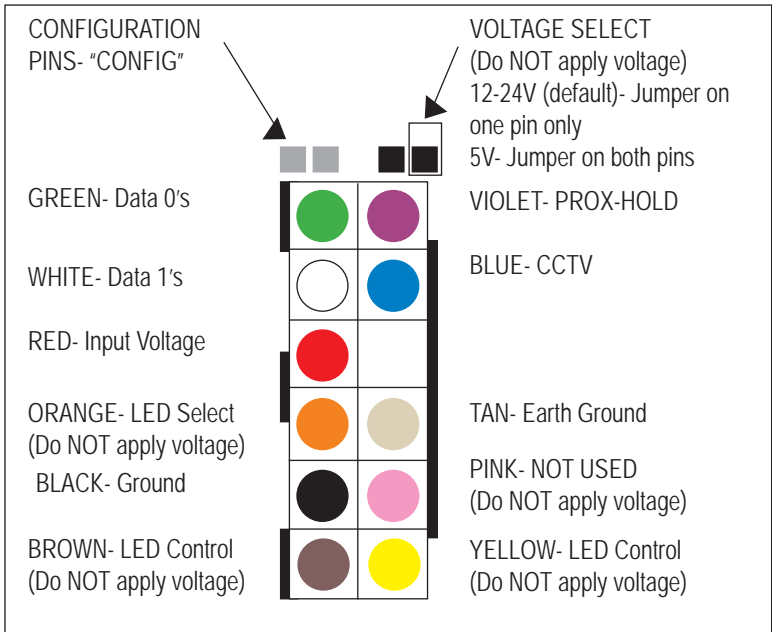
4 Bit Word Specifications

DATA 1 and DATA 0 signals are open collector outputs with 2.2K pull-ups to the internal +5V. The data is sent at 1 msec per bit with a pulse duration of 50 usec. An annunciator beeps with each key press. An output is generated with each key press which can be used to drive a CCTV or Security Light. Located through the BLUE wire (see Connector Wiring), this is an open collector output capable of sinking 1/4 A with a 30 second on time.

Each key press generates an 4-Bit sequence in the following output format:

KEY	OUTPUT	KEY	OUTPUT
0	0000	6	0110
1	0001	7	0111
2	0010	8	1000
3	0011	9	1001
4	0100	*	1010
5	0101	#	1011

■ 4 Bit Word Connector Wiring



BLUE - CCTV

Pressing any position on the Keypad will generate a 30 second 0.25 amp intermittent duty grounding output.

ORANGE - LED Control

The ORANGE wire allows the choice of controlling the RED & GREEN LED's on the Keypad with either 1 wire (BROWN) or 2 wires (BROWN & YELLOW).

ORANGE - LED Control, cont'd.

- a. When the ORANGE wire is floating (not connected), two wires control the LED's. When the BROWN wire is pulled low (grounded), the GREEN LED is on. When the YELLOW wire is pulled low, the RED LED is on.
- b. To control both LED's with one wire (BROWN), pull the ORANGE wire low. When the LED control input is pulled low, the GREEN LED will be on and the RED LED will be off. When the input goes high, the RED LED will be on and the GREEN LED will be off. The LED that is illuminated will blink with every key press. The LED control is pulled to the internal +5 with a 2.2K resistor.

TAN- Case Ground

In higher static prone areas, the TAN wire is used to divert static discharge away from the microprocessor in the Keypad. Ideally, the TAN wire should be connected to a known Earth Ground or the Black wire at the Keypad installation point (Do NOT run back to the panel through the cable).

•••• Notes

••••• Warranty & Repairs

■ General Warranty Policy (effective date April 1, 2011)

Essex Electronics Inc. (“Essex”) warrants that at the time of original purchase from Essex the products specified below are free from defects in workmanship and material. Subject to the conditions and limitations set forth below, Essex will, at its option, either repair or replace any part of its products that prove defective by reason of improper workmanship or materials. Repaired parts or replacement products will be provided by Essex on an exchange basis, and will be either new or refurbished to be functionally equivalent to new. Essex reserves the right to discontinue a product for any reason, without notice, at any time. If a product that has been discontinued proves defective and if Essex is unable to repair or replace the product, within the terms expressed in this Limited Warranty, a substitute product may be provided at Essex’s election, as a replacement for the original discontinued product.

This Limited Warranty extends only to the original retail or wholesale Buyer and the original site of installation. It does not cover any damage to this product or parts thereof, if the product is installed in violation of the applicable codes or ordinances, or is not installed and used in accordance with our installation instructions. This warranty applies only to standard Essex products purchased as completed assemblies and does not cover custom products (excluding custom graphics) nor does it cover products purchased as subassemblies. This warranty will only include the normal operating life of the LED’s and relays as specified by the manufacturer. It does not cover any damage that results from accident, abuse, misuse, natural disaster, insufficient or excessive electrical supply, abnormal mechanical or environmental conditions, or any unauthorized disassembly, repair, or modification. This Limited Warranty also does not apply to any product on which the original identification or date of manufacture information has been

altered, obliterated or removed. In no event shall Essex be liable for any damage to persons, property or area surrounding the installation site caused by any malfunction of the product manufactured or supplied by Essex.

Essex will not pay, nor be responsible for shipping, transportation or delivery charges, or other cost of removal of a defective product or installation of a replacement product. The original component replaced under this Limited Warranty in any system shall become the property of Essex and as such will, at our request, be returned to our factory with transportation charges paid by the Buyer.

Limited Lifetime Warranty: Products carrying Limited Lifetime Warranty against defects in materials and workmanship are Essex KTP Series Keypads, K1 Series, SKE Series Keypads, KE-265 Series, PEB and Hand-E-Tap Series Door Access Switches. Only products with a manufactured date of 5/1/06 to the present date are covered by this Limited Lifetime Warranty.

Limited 18 Month Warranty: Products carrying an 18 month warranty against defects in materials and workmanship include External Power Supplies, HID Edge® controllers and products with embedded 125 kHz and 13.56 MHz Card Reader processors including the PiezoProx®, iSMART™, K-Prox, RoxProx™ and Keyless IP Series.

Limited 3 Year Warranty: Essex KE-1700 Series and AKE-5 Series are covered by a 3 year limited warranty against defects in materials and workmanship.

Limited 2 Year Warranty: Essex products used for Elevator access control applications are covered by a 2 year limited warranty. This includes the KE-1000, KE-1900 and SKE-34 used in an elevator access control installation.

Essex Electronics, Inc.'s liability and Buyer's remedy under this warranty is limited to the repair or replacement at Seller's election of the product, or parts thereof, returned to Essex Electronics Inc. at

Buyer's expense and shown to Essex Electronics Inc.'s reasonable satisfaction to have been defective.

Notice of any defect must be sent in writing to Essex Electronics, Inc., 1130 Mark Avenue, Carpinteria, California, 93013, USA and must include the date code of the unit, description of the defect and factory assigned Return Authorization #. Upon receipt of such notification, Essex will determine whether to repair or replace. We also reserve the right to have our representative make any inspection or repairs, or furnish replacements.

ESSEX RESERVES THE RIGHT TO AMEND THIS GENERAL WARRANTY POLICY AS REQUIRED.

Disclaimer of Warranties: Limitation of Buyer's Remedies

Except for the repair or replacement at seller's option which is expressly set forth above, Essex Electronics Inc. extends no warranty of any kind, express or implied, and disclaims any implied warranty of merchantability or suitability for purpose for which sold, with respect to the keypads, keyless entry coded access system or accessories. Except for the limited repair or replacement specified above, under no circumstances will Essex Electronics Inc. be liable to buyer under or in connection with any manufacture or sale of any of the products set forth above under any tort, negligence, strict liability, contract or other legal or equitable theory, or for incidental or consequential damages, or buyer's cost of effecting insurance coverage.

The foregoing limited warranty expressed herein constitutes the sole and entire warranty with respect to the products set forth above and is in place of any and all other warranties, express or implied.

This warranty may not be expanded or extended by any oral representation, written sales information, advertising, drawings or otherwise. Essex Electronics Inc. is not responsible hereunder for incidental damage to person or property, or other incidental or consequential damages. The remedies of the buyer shall be limited

to those provided in this limited lifetime warranty to the exclusion of any and all other remedies, including, without limitation, incidental or consequential damages.

This Limited Lifetime Warranty shall be governed by and interpreted in accordance with the California Uniform Commercial Code and by the procedural laws of the State of California. Any lawsuit or other action which arises out of, relates to, or is in connection with the manufacture or sale of the products set forth above shall be governed by California law, and the venue for any such action shall be the Superior Court of the State of California in and for Santa Barbara County, California.

■ **Repair Policy**

Should it be necessary for a component or a system to be returned for repair, it must be accompanied with an RA# (Return Authorization Number) issued by the factory. Please call 1-800-KEYLESS (800-539-5377) to obtain an RA#. All returns must be sent to the factory freight prepaid. Collect shipments will not be accepted at any time. Standard turnaround time is ten (10) working days from the date of receipt. Repaired components will be returned UPS Ground (or equivalent). Any other shipping requests or instructions will be at the customer's expense.

At the factory's discretion, warranty repairs will include repair or replacement, update and testing. Returns and repairs out of the warranty period or in warranty with damage not covered under warranty shall be subject to a repair charge. All non-warranty repair freight charges are paid for by the customer. Non-warranty repair charges must be paid by credit card. (Factory Authorized Distributors are subject to standard terms).



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