# User manual

# For

# uTrust TS KEYPAD
# Version 1.6

## Confidential

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# Document History

| Version | Date | Description of Change | Author |
|---|---|---|---|
| 1.0 | 08-May-15 | Initial version | Suresh Kumar T |
| 1.1 | 09-Oct- 15 | Wiegand section, Outdoor, temperature profile modified. | Suresh Kumar T |
| 1.2 | 26-Oct-15 | Document updated after inputs from UL | Sudhan Immanuel G |
| 1.3 | 30-Oct-15 | Current ratings for different voltages and wiring configuration for power updated | Sudhan Immanuel G |
| 1.4 | 18-Nov-15 | Document updated to restrict Ethernet POE cable lengths | Sudhan Immanuel G |
| 1.5 | 19-Nov-15 | Document updated after review comments from UL | Sudhan Immanuel G |
| 1.6 | 14-Dec-2015 | PoE current rating updated | Sudhan Immanuel G |

# uTrust TS KEYPAD User Manual

## Contents

# uTrust TS KEYPAD User Manual

## 1.0 Introduction

This document details the Physical Access Control Reader **uTrust TS KEYPAD** and its basic user instruction and installation procedures.

## 2.0 Reader

### 2.1 Functionality

TS KEYPAD reader is a physical access control smart card reader that can read HF and LF contactless credentials, conforming to the following standards: ISO 14443 A & B, ISO15693 with a keypad pin entry for additional security. The reader can interface with an access control system equipped with a Wiegand or RS485 serial interface. It can also be interfaced with a Host Sever / Control Panel that supports Ethernet interface. User interfaces include RGB LED's and Buzzer.

### 2.2 Front/Top Casing

## 2.3 Back View/plate


Standard version


Connectivity version

Back plate

# 3.0 Product details

| | |
|---|---|
| Model Name | : uTrust TS keypad |
| Device Type | : RFID reader, 13.56MHz (HF) / 125 KHz (LF), keypad<br>Physical Access control Reader (accessory equipment) |
| Type of equipment | : Potted Reader, Suitable for Indoor use |
| Interface Type | : Phoenix connectors and RJ45 |
| Voltage Rating | : 6-16V DC (or) 48V DC on RJ45 Connector |
| Current Rating @12V | : Peak Current – 255 mA, Average Current 180 mA |
| Communication protocol | : Wiegand, RS485 (2wire - Half Duplex), 10BaseT ETH |

# 4.0 Specifications

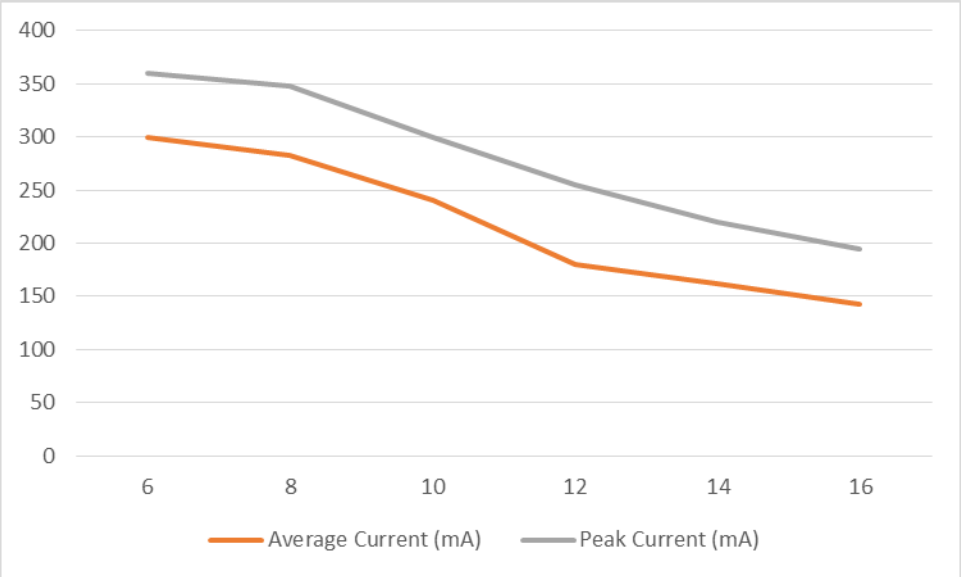
| Model | Operating Voltage | Current | Operating temp | Operating humidity |
|---|---|---|---|---|
| 8230<br>uTrust TS<br>KEYPAD | 6-16 VDC | Av -180 mA @12V<br>Pk -255 mA @12V<br><br>Refer Section 4.1 for detailed ratings at various voltages | 0 to +49C | 85 +/-5 % RH |
| | POE@ 48VDC* | 80 mA Max. | | |

* POE sourcing equipment shall be UL 294 or UL 294B Listed with Class 2 output

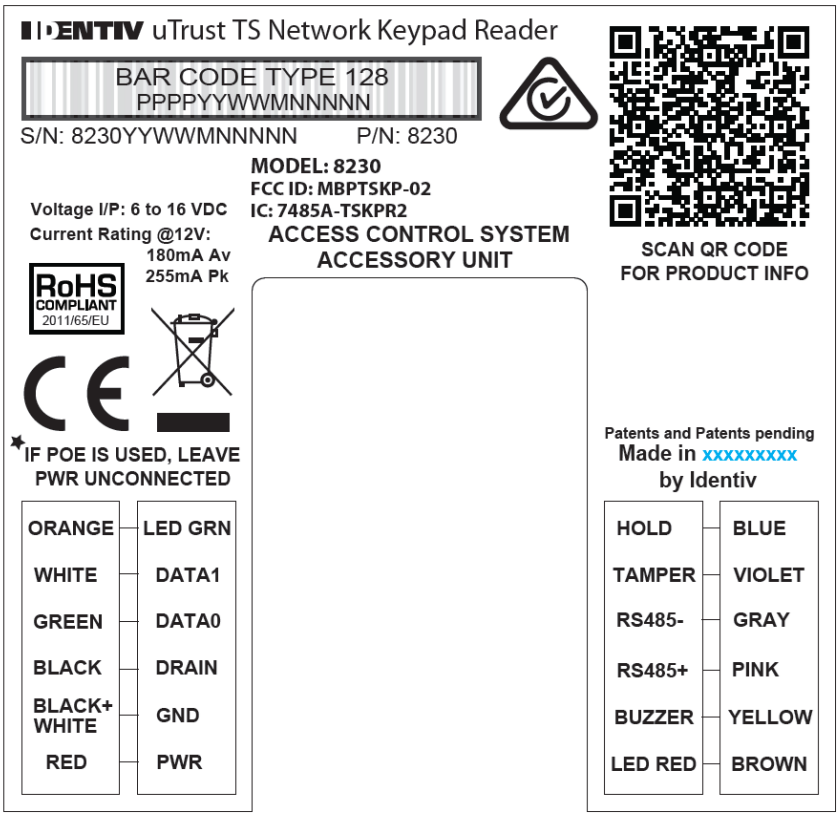
- When the readers use POE as a power source, the power input wiring from the control unit (i.e. Red and Black for 8230) shall be disconnected
- The maximum length of the Ethernet cable when using POE as the power source in UL installations is limited to 30 meters (98.5 feet)
- There shall be no connections made to the RS-485 interface ( RS485+ and RS485-) for UL installations

## 4.1 Rated current at different operating voltages

| Voltage (V) | Average Current (mA) | Peak Current (mA) |
|---|---|---|
| 6 | 300 | 360 |
| 8 | 283 | 348 |
| 10 | 241 | 300 |
| 12 | 180 | 255 |
| 14 | 162 | 220 |
| 16 | 142 | 195 |




## 5.0 Label




**Caution:**
During Wiring make sure that the +VDC lines does not make contact with any other cables, as it might affect reader functionality/ cause damage to the reader.

## 6.0 Installation details

Wiring methods shall be in accordance with the National Electrical Code (ANSI/NFPA70), local codes, and the authorities having jurisdiction.

## 6.1 Parts List

- TS Keypad reader -1
- Screws (A #6-18X1.5" SS ) - 4Nos – Back Plate mounting screws for Wall
- Snake Eye Screw (SMF #6-32X5/16" SS) – 1 No- Top casing mounting security screw
- Screws (SMF #6-32x3/8" SS) - 3 No's - 1 casing to back plate mounting screw and 2 Junction Box mounting screws
- Nylon anchor plug -4 Nos
- 6 pin phoenix plug (Phoenix connector version only) – 2 Nos
- Back Plate

## 6.2 Recommended Infrastructure

- All cabling and wiring shall be UL Listed and/or UL Recognized
- There shall be no connections made to the RS-485 interface ( RS485+ and RS485-) for UL installations
- Cable Wiegand - 22AWG Shielded cable. ( Cable P No : ALPHA WIRE, P/N 1299/10C)
- Cable RS485 - RS485 for 1000m** (4000ft) 24AWG STP
- Cable RJ45 - Cat5e / Cat6
- Class 2 Linear DC PS - 6-16 V, 1A min.

** Tested in lab conditions up to 115Kbaud

## 6.3 Connector Information

### 6.3.1 Pinout diagram

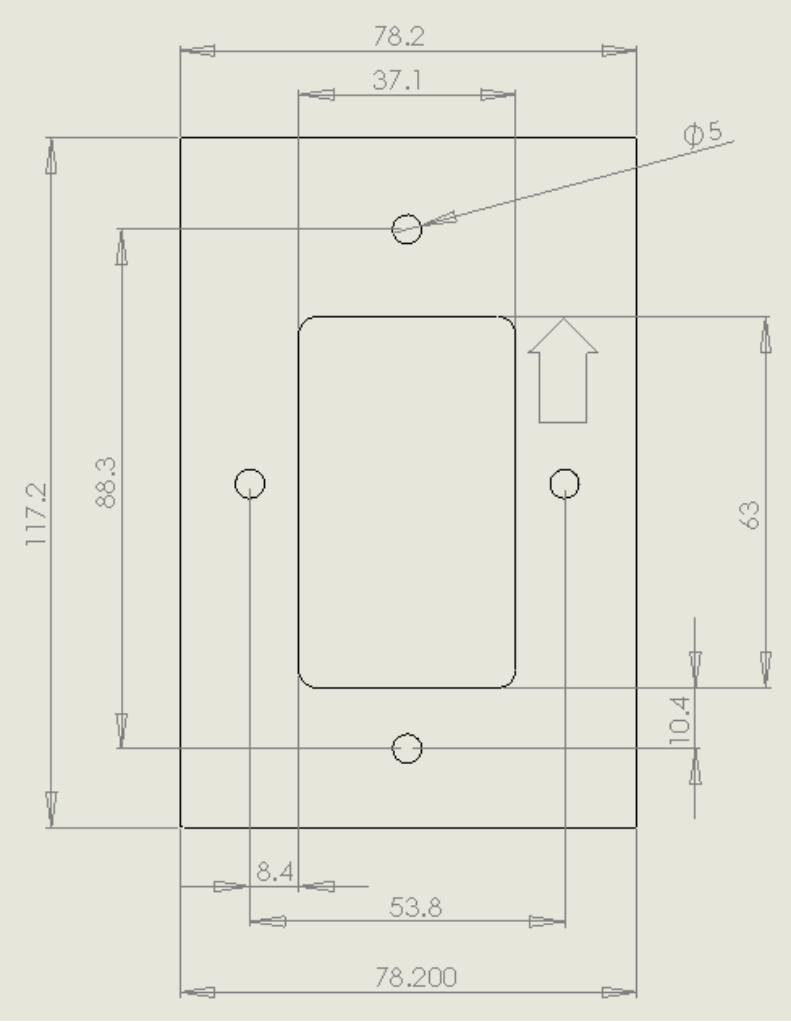
| Pin Number | Pin Function | Wire Color |
|---|---|---|
| P1.1 | LED Green | Orange |
| P1.2 | Wiegand Data 1 | White |
| P1.3 | Wiegand Data 0 | Green |
| P1.4 | Shield Ground/ Drain | Black |
| P1.5 | Ground | Black & White |
| P1.6 | + 12 VDC (nominal) | Red |
| P2.1 | Hold | Blue |
| P2.2 | Tamper Output | Violet |
| P2.3 | RS485 – | Grey |
| P2.4 | RS485 + | Pink |
| P2.5 | Buzzer | Yellow |
| P2.6 | LED Red | Brown |

- **Shield Ground/ Drain – Black color should be connected to the cable shield.**

**Caution:**
During Wiring make sure that the +VDC lines does not make contact with any other cables, as it might affect reader functionality/ cause damage to the reader.

## 6.4 Mounting the Reader

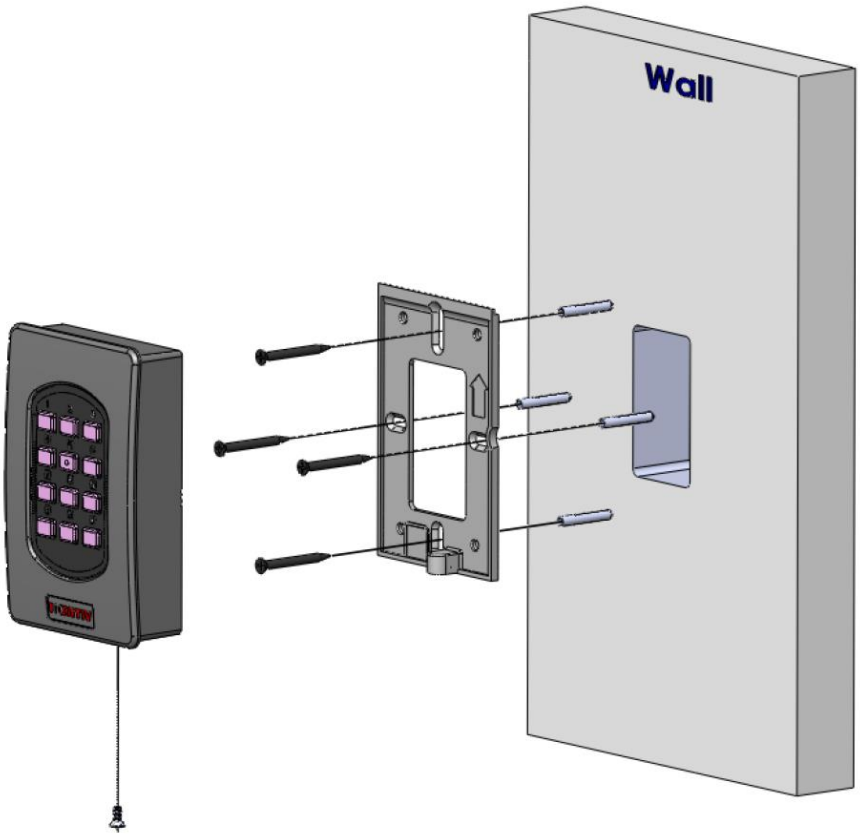
### 6.4.1 Location of mounting holes on wall



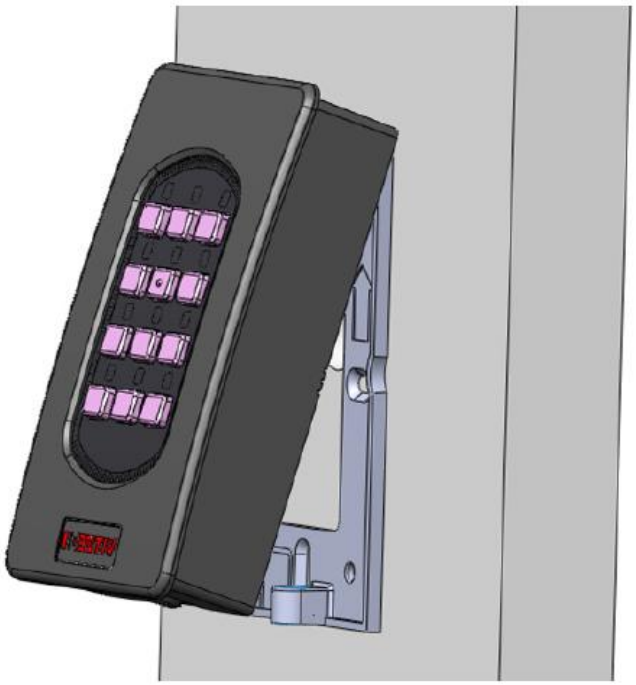

**Phoenix connector Reader – 4 Holes and 1 Slot**

### 6.4.2 Reader Installation Steps

a. Make holes on the wall as per the image above.
b. Insert the nylon screw plugs into the wall.
c. Connect the wires as per the Table 2 or Table 3.
d. TouchSecure® reader with Bottom Casing is to be now secured onto the wall using the Screws (A #6-18X1.5" SS )
e. The top casing can be inserted onto the bottom casing
f. Secure the Top and bottom casing by the Snake Eye Screw (SMF #6-32X5/16" SS)




Install Reader to Backplate



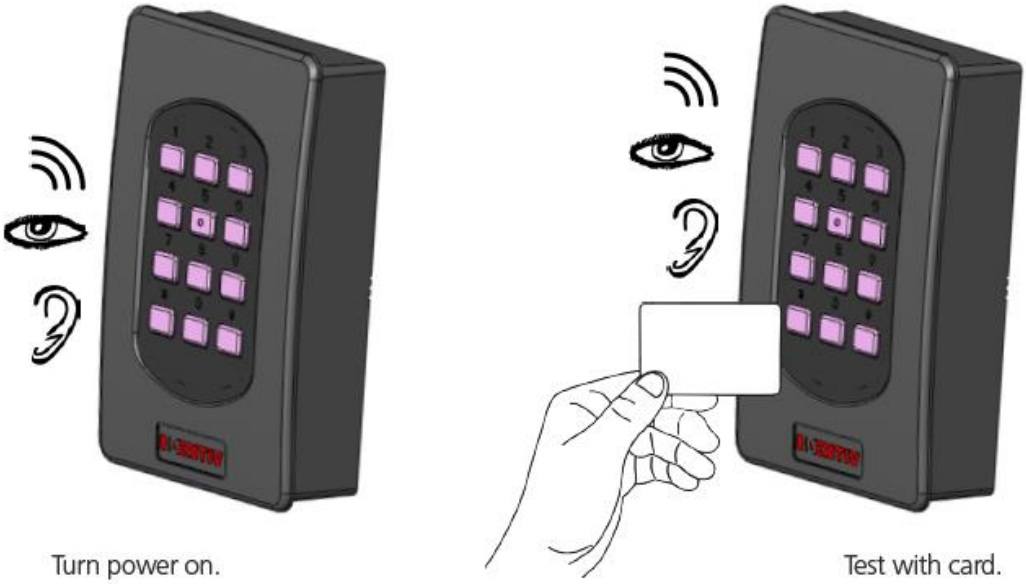
## 7.0 Power up and Testing

1 **Turn power on**
The LED blinks 3 times green with a long beep, then turns red

2 **Present a card**
The LED blinks green, and a short Beep is emitted

3 **Press Key**
Buzzer tone & backlight LED blinks

This is the default reader behavior.



Turn power on. Test with card.

# 8.0 Certifications

## 8.1 FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

**Information to user**

Changes or modifications not expressly approved by ***Identiv*** *could* void the user's authority to operate the equipment.

## 8.2 IC

This device complies with Industry Canada license-exempt RSS standard(s).
Operation is subject to the following two conditions:
(1) This device may not cause interference
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

## 8.3 UL 294

- Communication via Wiegand was evaluated by UL and serves as the interface between the reader and panel
- Communication via RS485 or OSDP is not permitted
- Communication via Ethernet was not evaluated by UL
- The maximum length of the Ethernet cable when using POE as the power source in UL installations is limited to 30 meters (98.5 feet)

### 8.3.1 UL 294 access control performance levels

| | |
|---|---|
| Destructive attack | : Level IV |
| Line Security | : Level I |
| Endurance | : Level I |
| Standby Power | : Level I |