

# Wall Mounted Reader Installation

This installation guide applies to the following types of readers:

- ET20 – Single Gang Reader
- ET25 – Single Gang Reader with Keypad

## Included:

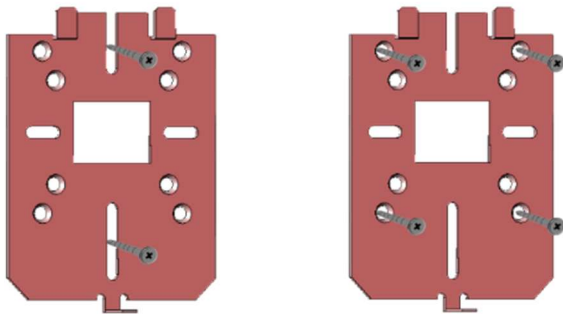
- (2) #6 Screws
- Reader, Backplate, and Wall Plate
- (1) #4-40, (1) pin-in-torx
- (4) #4 Screws

## The Following tools will be needed to install a wall mount reader:

- Phillips Screwdriver
- 1" (25mm), 1/8" drill bits
- T8 Security Torx Bit (optional for increased tamper detection)

## 1 Install Metal Wall Plate to Single Gang Box

Connect the wall plate to the single gang box using the provided #6 screws. Alternatively, the reader can be mounted using the provided #4 screws in the four outer holes for other installation requirements. Drywall installations will require molly bolts.



Standard Single Gang Box Installation

Alternative for situations outside of a single gang box installation

## 2 Wire the Cable to the Control Panel

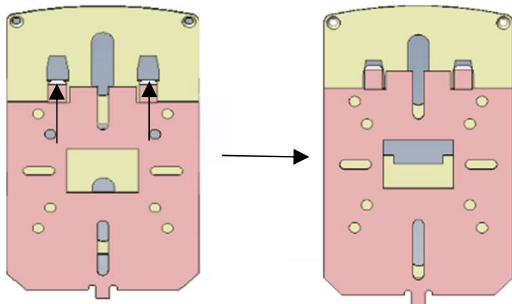
Common Cable Connections		Max Length to Panel	
Red	Power In	Wiegand	
Black	Ground	Length	AWG
Shield	Shield Ground	200' (60 m)	22
Brown*	Tamper Out	300'	20
Green	Wiegand Data 0 / RS 485A(+)	500'	18
White	Wiegand Data 1 / RS 485B(-)	<b>OSDP 9600 Baud</b>	
Yellow*	Beeper Control	Power 12 VDC	
Blue*	Green LED Control	1000'	22 AWG Twisted Pair
Orange*	Red LED Control	<b>Current @ 12 V and 25 C</b>	
		<b>Avg. mA</b>	<b>Max. mA</b>
		ET20: 118	ET20: 169
		ET25: 143	ET25: 193

\*these wires are only used in Wiegand readers.

All wiring methods used shall be in accordance with the National Electrical Code, ANSI/NFPA 70

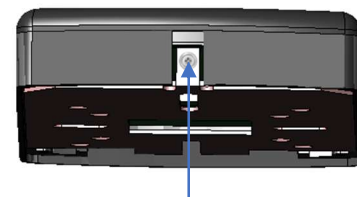
## 3 Attach the Reader to the Wall plate

Align the reader so that the tabs of the base plate slide into the slots on the wall plate and slide the reader into position.



## 4 Install the Reader Screw

Install the #4-40 screw or pin-in-torx at the bottom of the reader.



Screw or pin-in-torx

## 5 Test the Reader

Power the reader and wait for the power up LED beep sequence to complete (see page 2 for sequence description). Present a valid credential to the reader and the light-bar will turn green. If the test fails, check the wiring.

**Installation tips:**

- By default, the reader will transmit credential and keypad data in Wiegand communication mode.
- The reader always be listening for an incoming OSDP message. If a message is received during this period, the reader will automatically switch to OSDP-only communication mode.
- When connecting the reader to an OSDP panel connect the Green wire to RS485A(TR+), and the White wire to RS485B (TR-).
- To return to OSDP auto-detect mode (default mode), tilt the reader 45 degrees to simulate tamper and cycle power in this state. The power up sequence should indicate OSDP auto-detect with 4 beeps.
- In OSDP the readers default baud rate is 9600 and starts up at Address 0. Baud rate and Address can be reset by performing the same tamper startup mentioned above.
- Once the reader’s default OSDP Key has been changed, only the panel can relink to a new OSDP Key.

Reader Startup Sequence		
Upon a power reset, the Ethos® Readers provide a reset sequence using the LED indicator and the beeper, to provide information about the reader type and its communication mode. The first sequence (sequence A) describes the credential technologies built in the reader: First, a silent LED sequence will indicate the supported RF protocols. Both LEDs turn off for 250 milliseconds.		
BLE	HF	Prox
Beeper Silent, Red LED on for 500 milliseconds	Beeper Silent, Green LED on for 500 milliseconds	Beeper Silent, AMBER LED on for 500 milliseconds
After the above AV sequence identifies the supported RF protocols, the reader will then indicate the supported host communication using beep/flash sequences. Then beeper and both LEDs turn off for 250 milliseconds.		
Wiegand	OSDP	Auto-Detect
Beep and Blink Red LED once for 200 milliseconds	Beep and Blink Green LED twice for 200 milliseconds each	Beep and Blink Green LED 4 times for 200 milliseconds each

Keypad Mode Setup		
Within one minute of reader reset, enter the keypad config code: <b>*88889999</b> . The reader beeps three times, LED flashes amber for each beep. Within 2 seconds of entering the keypad config code, press the corresponding key code below for the desired format. The reader then beeps three times, LED flashes amber for each beep.		
4-Bit Format	8-Bit Format	26-Bit Format
<b>*4</b>	<b>*8</b>	<b>#077</b>

**Note:**

- All wiring methods used shall be in accordance with the National Electrical Code, ANSI/NFPA 70
- Readers must be powered by a compatible UL Listed, power limited, access control panel rated 5 – 16 VDC.

**Performance Levels**

- Destructive Attack: I
- Line Security: I
- Endurance: IV (125 kHz, 13.56 MHz), I (BLE)
- Standby Power: I

**Approvals**

EN302291, EN301489, EN300330, IP55, UL294

**Patents - US9558377, & US9747738B1**

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.

This telecommunication equipment conforms to NTC technical requirement

*This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(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.*

*L’émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d’Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes: 1. L’appareil ne doit pas produire de brouillage. 2. L’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.*