Transition Series

Multi-Technology Access Readers

UTC Fire & Security
A United Technologies Company

Description

Transition™ multi-technology card readers feature simultaneous compatibility with multi-vendor 125 kHz Proximity, Mifare (ISO 14443A), and Vicinity (ISO 15693) credential technologies—all in one reader. With this remarkable technology combination, security administrators can now deploy the Transition readers into new or existing facilities.

Figure 1. Multi-technology Readers

Mounting the Reader

All models of the multi-technology series readers can be mounted using a U.S. single-gang electrical box or directly to a wall.

1. Find a suitable mounting position on the door frame or wall.
    Note: For out of doors or wet locations, it is recommended that the gasket provided be installed on the base as shown in Figure 5.

2. If mounting directly to the wall, use one of the following methods:

    2a. Drill two vertical mounting holes from 3.25" (83 cm) to 4.891" (125 cm) apart on the mounting surface of the door frame or wall.

Figure 2. Direct wall mounting
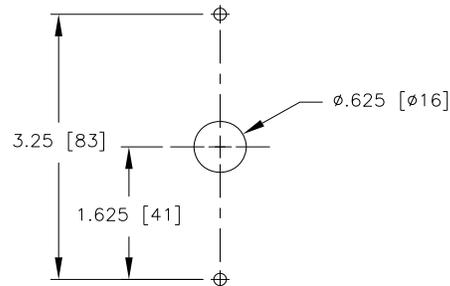
DIMENSIONS = INCHES [MM]

2b. Models 520/525 can be mounted using a second pair of vertical mounting holes, horizontally spaced 2.75" (70 cm) from the first pair.

Figure 3. T520/525 Direct wall mounting alternative
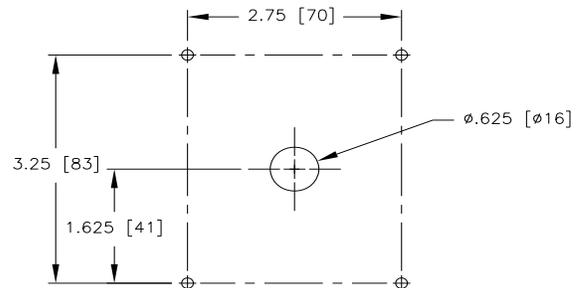
DIMENSIONS = INCHES [MM]

3. Drill one 0.625" (15.87 mm) diameter hole in wall for the pigtail wire connection.

4. Follow the Cable Connection Chart to connect the reader to the field panel and external door equipment.

5. Mount the base plate to the wall using the supplied screws.

6. Install gasket if required, see Figure 5.

7. Install the top cover to the reader base. The base plate and top cover guides should be aligned, so the connectors seat correctly.

Figure 4. Aligning base plate and top cover

Base plate ⟶   ⟵ Top cover
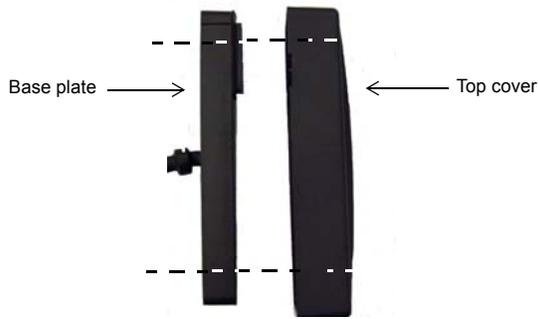
8. Verify the connection is secure and install the security screws on the top and bottom of the reader.
9. Cover the exposed screws with the rubber plugs provided.

Figure 5. Gasket detail

530483019A
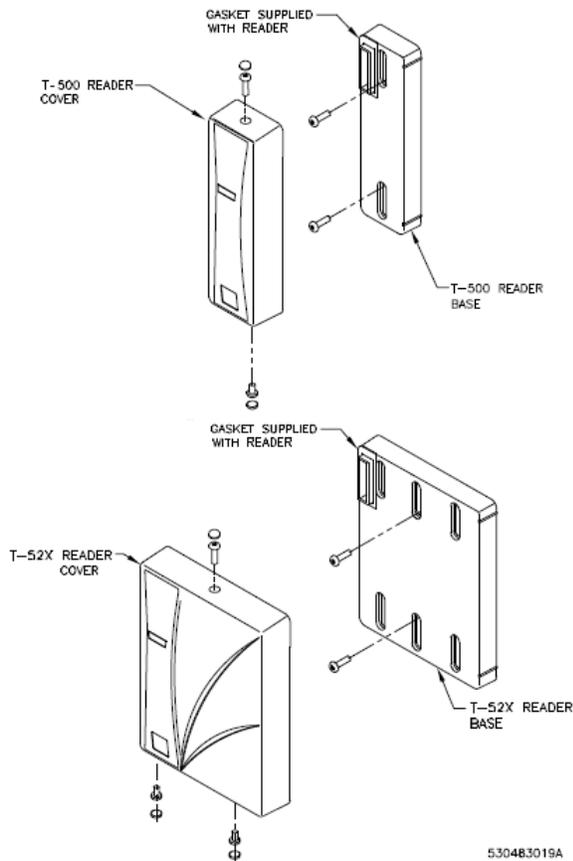
Connecting the Cable

1. The readers are supplied with a 12-conductor cable pigtail with drain wire. Connect the pigtail to the host panel. Use the Cable Connection Chart (below) to correctly match the color of each wire.

Color	Signal
Red	6 to 16 VDC
Black	Ground
Green	Data 0
White	Data 1
Orange	Green LED Control
Brown	Red LED Control
Yellow	Beeper Control
Gray	Door DI
Pink	REX DI
Tan	Tamper Output
Blue	Hold
Purple	Reserved
....	Drain Wire

2. Use a DC Power source between 6-16 VDC.
3. Verify the reader is properly grounded by attaching the ground wire to an earth ground connection at the power supply or field panel end of the cable. Connect reader's drain wire to the cable shield. Connect shield wires at the field panel. The recommended cable gauge is 18-gauge to 22-gauge. Check with the cable supplier to determine the best choice for the application and installation distance.

Testing the Reader

1. Power up the reader. Verify the power-on self test
   LED/beep sequence:
   - green LED flashes; two short beeps
   - yellow LED flashes; three short beeps
   - red LED flashes.
   - yellow LED flashes.
2. Verify the yellow LED is on continously indicating the reader is ready.
3. Present a badge that has been properly enrolled in the system. Verify the yellow LED flashes and a short beep is heard.

Removing the Cover

1. Remove all security screws.
2. Pull cover off the base. Refer to Figure 4 on page 2.

Keypad Configuration Card

1. Place the reader in tamper mode by briefly removing and replacing the reader's cover while the power is on. The reader stays in tamper mode for 60 seconds (minimum) after power is applied or the cover is replaced.
2. Present the keypad configuration card within one minute. The LED turns green and a short triple-beep indicates the reader is ready to configure.
3. Enter the keypad entry within five seconds. Use the chart below to identify the correct keypad entry.

	Mode/Keypad entry	Setting	UTC	non-UTC
1	* followed by 0 (Factory default setting)	8 bits per key, no buffering.	✔	✔
2	* followed by 1	6 bits per key, no buffering.		✔
3	# followed by 3 keys (0 to 9 only)	26 bits output custom configuration. (Contact Sales Engineering/Pre-Sales Support for assistance.)		✔
4	1 followed by 1 key (0 to 9 only)	4 bits per key, no parity, up to 9 keys buffered.		✔
5	1 followed by *	4 bits per key, no parity, up to 10 keys buffered.		✔
6	1 followed by #	4 bits per key, no parity, up to 11 keys buffered.		✔

For non-UTC keypad configurations, contact Sales Engineering/Pre-Sales Support for assistance.

FCC Compliance

The FCC requires the following statement: This reader uses radio frequency energy and has been tested, and complies with the limits of FCC testing. Changes, modification, or disregard of proper installation and instructions not expressly approved by UTC Fire & Security, and is strictly prohibited by the FCC and could void the user's authority to operate the equipment.

Specifications

Colors	Black, Charcoal, Light gray
Power supply	Linear DC recommended
Power usage	T-500: 210 mA @ 12 VDC T-520/T-525: 130 mA @ 12 VDC
Voltage range	6 - 16 VDC
Temperature range[a]	-31°F to 149°F (-35°C to 65°C)
Cable distance to panel	<table><tr><td>Cable Distance Max. @ 12 VDC</td><td>AWG</td></tr><tr><td>200 ft. (60.96 m)</td><td>22</td></tr><tr><td>300 ft. (91.44 m)</td><td>20</td></tr><tr><td>500 ft. (152.4 m)</td><td>18</td></tr></table>
Read Range[b] *(Distances may vary depending on environment.)*	Proximity Perfect cards are not supported by the Transition Series reader. **Model T-500W:** - Proximity: up to 3.5" (8.89 cm) - HID Proximity: up to 3.5" (8.89 cm) - Mifare: up to 1" (2.54 cm) Ultralight cards not supported - Vicinity: up to 5" (12.7 cm) **Model T-520W and T-525W:** - Proximity: up to 5" (15.24 cm) - HID Proximity: up to 5" (15.24 cm) - Mifare: up to 1" (2.54 cm) Ultralight cards not supported - Vicinity: up to 5" (12.7 cm)
Wiegand output	Proximity 4002 (40-bit) Mifare 4002 (40-bit) Vicinity 5502 (55-bit)
Tamper output	Open Collector
Regulatory approvals and standards	UL 294, CE, and FCC (part 15)
ISO Standards	Mifare ISO 14443A Vicinity ISO 15693

UL evaluation for UL Listed Installations:

a. -25°F to 125°F (-32°C to 52°C)
b. **Model T-500W**
   Vicinity: up to 4.5" (11.43 cm)
   Model T-520W and T-525W
   Proximity, HID Proximity, and Vicinity: up to 4.5" (11.43 cm)

The voltage specification for this reader is 6—16 VDC, although 12 VDC or greater is recommended for better performance and cable run distances.

Ordering information

Product	Part Number
T-500W (Black; Mullion mount; Wiegand output) *	430209006
T-520W (Black; 1-Gang US mount; Wiegand output) *	430210006
T-525W (Black; 1-Gang US mount; Keypad; Wiegand output) *	430211006
T-500W (Charcoal; Mullion mount; Wiegand output) *	430209005
T-520W (Charcoal;1-Gang US mount; Wiegand output) *	430210005
T-525W (Charcoal; Gang US mount; Keypad; Wiegand output) *	430211005
T-500W (Light gray; Mullion mount; Wiegand output) *	430209004
T-520W (Light gray; 1-Gang US mount; Wiegand output) *	430210004
T-525W (Light gray; 1-Gang US mount; Keypad; Wiegand output) *	430211004
Single Gang Mount plate (Black; 1-Gang US mounting plate for model T-500)	470677002
Single Gang Mount plate (Charcoal; 1-Gang US mounting plate for model T-500)	470677003
Single Gang Mount plate (Light gray; 1-Gang US mounting plate for model T-500)	470677001
Dual Gang Mount plate (Black; 2-Gang US mounting plate for models T-52x)	521228001
Dual Gang Mount plate (Charcoal; 2-Gang US mounting plate for models T-52x)	521227001
Dual Gang Mount plate (Light gray; 2-Gang US mounting plate for models T-52x)	521226001
* Installation wrench (Required)	385001001