



# PIM400-TD2

## Panel Interface Module

### Wiegand or Clock & Data Communication

#### Overview

The PIM400-TD2 seamlessly integrates to virtually any access control panel and their reader interface modules via Wiegand or Clock & Data protocols. Each PIM400-TD2 supports up to two wireless access devices such as AD-400/401 series locks.

#### Reliability

Reliable communications result from several technological advances and incorporated features. 900 MHz spread spectrum technology enables high transmission power in a license-free band. Error detection algorithm maintains data integrity on each transmission and redundant transmissions ensure communication success. Periodic “heartbeat” signals provide supervision and assure reliable RF communications are maintained. Lastly, Dynamic Channel Switching (DCS) can be enabled to overcome harsh RF environments by automatically changing channels to avoid potential interference.

#### Security

Used extensively by government and military organizations, spread spectrum technology provides significant security advantages over conventional transmission methods. Wireless access devices utilize spread spectrum transmissions, which are encrypted with AES-128 bit keys, to yield a system that is virtually uncompromisable. In addition, scalability is virtually unlimited as each AD-Series wireless access module has nearly a million addresses to choose from during the linking process.

#### Centralized Lock/Unlock Command in 10 Seconds or Less

Patent-pending Wake-up On Radio (WOR) feature drives communication from the PIM400 to any or all linked wireless devices in 10 seconds or less. This innovative feature works efficiently in parallel with periodic “heartbeat” to maintain up to 2 year battery life on wireless devices such as the AD-400/401 locks. Response rate can be field configured down to 1 second with consideration of battery life. When Wake-up On Radio is used in critical applications Dynamic Channel Switching should also be enabled.



Networked Locking Solutions  
PIM400-TD2 Panel Interface Module

#### Features and Benefits

- 900 MHz spread spectrum RF technology for long range, reliable communications
- Supports up to two AD-Series wireless devices
- Automatic linking to remote wireless access points with 10 channel frequencies to select from enables easy commissioning
- AES-128 bit encrypted spread spectrum transmissions
- 13 visual indicators to quickly verify operation and troubleshoot
- Flash memory for easy software upgrades
- Certifications:
  - NEMA 1, 4, 4X, 6; UL 294, FCC Part 15; RoHS

## ADDITIONAL FEATURES

### Reliable Communications

900 MHz band enables longer transmission ranges. In general, signal propagation with longer wavelengths travel a greater distance and penetrate through, and around objects better than signals with shorter wavelengths.

### Online Communications (Heartbeat)

Regular communications between the AD-Series wireless access module and PIM400 monitor transmission presence and integrity. Online communications enable the PIM400 to download information or instructions such as unlock and relock.

### Auto Addressing (Linking)

One of the final steps in the installation process is called "linking". Linking ties a specific wireless access module to a selected PIM400 and assigns a unique address. There are over 65,000 unique addresses available per channel, providing nearly a million combinations for virtually unlimited scalability.

### Assured Communications

A Packet-Error-Rate-Test (PERT) is performed during linking at reduced power levels to ensure reliable communication during operation.

### Encoded Transmissions

Each RF transmission is encrypted with AES-128 bit keys to provide virtually uncompromisable security.

### Tamper

The PIM400 cover is monitored by a tamper switch.

### Visual LED Indications

- Power on
- Microprocessor running
- Linking status to WAPM
- PIM transmitting RF data
- PIM receiving RF data
- PIM receiving data
- PIM transmitting data
- Door Position
- PIM tamper status
- PIM firmware version
- Wiegand and Clock & Data Status 1 & 2
- Door Status 1 & 2
- Trouble 1 & 2

### Standard Open Collector Contacts

- Configurable for Normally Open or Normally Closed
- Door Position
- Request-to-Exit
- Request-to-Enter
- Trouble

### Optional Relay Board (RLBD) to achieve Dry Contact

- Configurable for Normally Open or Normally Closed
- Door Position
- Request-to-Exit
- Request-to-Enter
- Trouble

### Access Point Status Available Through PIM400-TD2

- Wiegand or Magnetic Stripe Card Data
- Door Position
- Request-to-Exit
- Request-to-Enter (optional)
- Trouble
  - loss of RF communication
  - low battery
  - PIM tamper
  - reader tamper

### Configurable Items from PIM400-TD2

- Wake up On Radio (WOR)
- Heartbeat frequency
- Relock parameters
- Card data format conversion
- Extended unlock
- Fail Safe/Fail Secure/Fail As-Is
- Door held pre-alarm
- Cache memory parameters
- Dynamic channel switching (DCS)
- Reader Configuration
- Keypad Configuration
- User interface configuration

## PIM400-TD2 Specifications

|                               |                                                                                                                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range               | 902-928 MHz                                                                                                                                                                                                                                  |
| Modulation                    | 900 MHz spread spectrum, direct sequence, 10 channels                                                                                                                                                                                        |
| RF Interference Avoidance     | Optional Dynamic Channel Switching                                                                                                                                                                                                           |
| Transmission/Encryption       | AES-128 bit Key (optional)                                                                                                                                                                                                                   |
| Credential Verification Time  | < 1 second*                                                                                                                                                                                                                                  |
| Communication Range           | Up to 200 ft (61 m) with obstructions<br>Up to 1000 ft (305 m) clear line of site<br>Up to 2000 ft (609 m) line of site with high gain antenna on PIM400<br>Up to 4000 ft (1219 m) line of site with high gain antennas on PIM400 and WRI400 |
| Visual/Audible Communications | 13 LEDs for Status Indicators                                                                                                                                                                                                                |
| System Interface              | Wiegand (data1/data0) or Magnetic Stripe (Clock & Data)                                                                                                                                                                                      |
| Power Supply                  | 12 VDC or 24 VDC                                                                                                                                                                                                                             |
| Voltage Range                 | 9.5 VDC to 26 VDC                                                                                                                                                                                                                            |
| Max Current Requirement       | Up to 250 mA                                                                                                                                                                                                                                 |
| Operating Temperature         | -31° to 151°F (-35° to 66°C)                                                                                                                                                                                                                 |
| Operating Humidity            | 0 - 100% condensing                                                                                                                                                                                                                          |
| Dimensions (HWD)              | 7.1" x 7.1" x 3.0"<br>(18.0 cm x 18.0 cm x 7.6 cm)                                                                                                                                                                                           |
| Weight                        | 1.25 lb (.56 kg)                                                                                                                                                                                                                             |
| Cable Specifications          | DC Power Input: 18AWG, 2 Conductor (Belden 8760 or equivalent) up to 1000 ft (303 m)<br>PIM400-TD2 to ACP: 22AWG, 8 Conductor Shielded (Alpha 1298C or equivalent) up to 500 ft (152 m)                                                      |
| Data Rate                     | RF: 40 kbps                                                                                                                                                                                                                                  |
| Certifications                | NEMA 1, 4, 4X, 6; UL 294, FCC Part 15; RoHS                                                                                                                                                                                                  |

\*Dependant on latency time of access control panel.

## ORDERING INFORMATION

**PIM400-TD2** – Panel Interface Module with outdoor enclosure standard. Supports up to two access points via Wiegand or Clock & Data with virtually any access control panel.

### Optional Accessories

- **ANT400-REM-I/O** – Omni-directional remote indoor/ outdoor antenna module. Requires available Grounding Kit (MGB+MCA5) for outdoor installations
- **ANT400-REM-I/O+6DB** – Directional, flat panel, remote indoor/outdoor antenna with 6db of gain. Requires available Grounding Kit (MGB+MCA5) for outdoor installations
- **MGB+MCA5** – Grounding Kit for outdoor installations
- **ANT400-REM-Ceiling** – Omni-directional ceiling mount indoor remote antenna
- **ANT400-REM-Hall** – Bi-directional indoor hall application remote antenna
- **HHK KIT** – Handheld Device with SUS installed and HH-USB cable
- **593PI-12DC** – 12 VDC power supply

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