

# Getting to Know Biometric Fingerprint Readers

## Fingerprint Basics

Fingerprints are one of those bizarre twists of nature. Human beings happen to have built-in, easily accessible identity cards. You have a unique design, which represents you alone, literally at your fingertips. How did this happen? The pattern of ridges and valleys found on fingers make it easy for the hand to grip things, in the same way a rubber tread pattern helps a tire grip the road.

In addition to the countless things that go into deciding your genetic make-up, there are innumerable environmental factors influencing the formation of the fingers. There is virtually no chance of the same exact pattern forming twice. Consequently, fingerprints are a unique marker for a person, and while two prints may look basically the same at a glance, a trained investigator or advanced piece of software can pick out clear, defined differences.

## How Fingerprint Scanners Work

The actual fingerprint identification process will change slightly between products and systems; the basics of identification, however, are nearly the same. Standard systems are comprised of a sensor for scanning a fingerprint and a processor which stores the fingerprint database and firmware (the code that compares and matches the fingerprint to the predefined database). Within the database, a fingerprint is usually matched to a badge or a pin reference number, which is linked to a person's employee number. This type of matching is called verification, because you are verifying that the finger matches the one on file for that employee. Some sophisticated fingerprint readers do not require a badge or pin number. The finger is scanned and then compared to all fingerprints in the database. This is called identification since you are identifying the employee based on their fingerprint. Although this method is preferable because it does not require a badge or a pin number, it does leave itself open for more false accepts and rejects. Here are some procedures you can follow to make sure your biometric product performs to its highest standards.

## Enrolling New Fingerprints

Pick a finger with a distinct fingerprint. Avoid fingers with scars. Some fingerprints read better than others, so you may need to experiment to see which finger works better for a particular employee. In some cases, you may want to enroll multiple fingers for an employee. Before registering your fingerprint, rub your thumb and finger together to create moisture or oil. This helps the fingerprint reader read the fingerprint. If your hands are dry this may affect the responsiveness of the reader. **Note:** Dry hands may cause the reader to not be able to detect a fingerprint.

Create the same finger motion when you register and authenticate your fingerprint. Follow the instructions provided by the manufacturer for fingerprint placement. Place your finger in the same location; the “matching algorithm” that creates the recognition for your fingerprints is very sensitive. If you turn your finger slightly or differently from your original registration, the fingerprint reader sensor will not recognize a match.

## **If You Are Experiencing Problems Recognizing Fingerprints**

- 1) Try enrolling a different finger
- 2) Adjust the verification level (if available to your system)
- 3) Have a finger cleaner available for employees to use

## **Keep The Reader Lens Clean**

Under heavy usage, the coating on the fingerprint reader window may turn cloudy from the salt in perspiration. In this case, refer to your user’s guide that was provided with your product to clean your lens according to the manufacturer’s specifications.

## **Your Operating System**

Most biometric products run constantly on your computer to have access to the employee fingerprint database, thus you may need a dedicated computer that will always be on to support the fingerprint reader. There are many operating systems, and they may have firewall protection built into the system. Some firewalls block ports, and authorized applications will need to be granted access to use specific ports. Please have your IT department contact the manufacturer for details on granting access to your biometric products.

## **Software and Hardware Support**

Most manufacturers offer complimentary setup support for 30 days from the date of purchase for all registered users. All software support provided after the initial setup period will most likely need to be negotiated with the manufacturer. You should read and understand the manufacturer’s terms for software and hardware support prior to purchasing any equipment or software.

**PLEASE NOTE: TimeClockSupplies.com does not offer direct technical support. To save you money, all products are sold as self-install systems. If you feel you need extra technical help, we highly recommend you purchase a support agreement.**