Entering the Age of Contactless, Convenient and Clean Biometric Access

A StoneLock White Paper

STONELOCK

We See People Differently

INTRODUCTION
Touchless Biometrics is the Future of Security

Face Authentication and the StoneLock Difference

Face-based authentication is the key to a contactless and clean biometric security system. That's why, in today's landscape of privacy concerns and regulations, it is crucial to understand how biometric access control technology like StoneLock GO can *enhance user privacy*.

Concerns around government use of facial recognition to identify non-consenting members of the public by comparing captured images to a photo dataset are founded. But the face biometrics discussed in this paper are fundamentally different than that, deployed only in a consent-based fashion, when a known user is exercising their given right to access.

We believe biometrics should only be used to enhance security, safety, convenience, and privacy. That's how StoneLock makes a difference.

Learn more about the StoneLock Difference in the new StoneLock white paper, **"How to Protect Privacy in Face-Based Access Control."**

The COVID-19 global pandemic has added another important element to the security conversation: hygiene. The time for touching shared public surfaces is over, and businesses are adapting their operations to improve cleanliness and minimize contact.

Yet, while society may be undergoing unprecedented change, the importance of security remains unchanged. Office doors, vaults, server cabinets, turnstiles, residences – these physical structures still demand protection, but traditionally they all require touch.

In the aftermath of this global crisis and the lessons learned, how can we protect spaces and assets without putting others at risk of infection?

Thankfully, the answer involves newly available technology that builds on the beneficial concepts proven through the advent of biometric authentication. Touchless biometrics allow for strong, trustworthy and convenient authentication at a safe distance.

For over a decade, physical security has been undergoing this transformation, from older-style key, keycard and PIN pad security to stronger, more accountable biometric systems, shifting the security paradigm from authenticating users based on what they have or what they know, to *who they are*.

This paper will outline the key concepts and prevalent use cases concerning touchless biometric access, and arm businesses and system users with the know-how to protect their assets and the health of their employees, customers and communities.

How Security Evolved Out of Friction

The Threat of Contagion

The novel coronavirus is primarily transmitted through person-to-person contact. When an infected individual sneezes or coughs, tiny droplets are emitted carrying the virus. If people nearby breathe them in, they can then become infected themselves.

A solution to that threat is social distancing. More troubling, however, is the fact that these droplets can drift to surfaces that may be touched by others. And because people tend to absentmindedly touch their eyes, nose and mouth throughout the course of the day, the threat of infection through these common surface vectors is a serious concern.

For this reason, contactless biometric options like StoneLock GO are seen as an important part of the broader fight to mitigate the spread of COVID-19, and any potential similar viruses to come.

In the context of authentication, "friction" refers to mechanisms that slow the process down by requiring specific actions from the subject. Online, this could refer to the process of entering a username and a password – oftentimes a password that cannot be easily remembered by the user.

Touchless biometrics – otherwise known as "contactless biometrics" – are the product of a long fight against this friction in authentication and identity verification. The idea of frictionless authentication is relatively recent, arising out of the ongoing trend toward digitization over the last couple of decades, and with the emergence of biometrics as a prominent means of authentication. As a result, this kind of friction has been dramatically reduced, with end users able to confirm their identities with a simple fingerprint scan or even a selfie on their smartphone or laptop.

However, in the world of physical access control, friction can be harder to smooth out. Traditional security mechanisms like keys and guarded gates have required comparatively elaborate actions from those who are trying to authenticate users, from physically unlocking a door to signing an entry log. Friction was built into these systems on purpose, because the authentication technologies available at the time meant that if it was too easy to gain access, fraudsters and other malefactors could exploit this weakness. Even the more recent development of contactless key fobs still requires users to carry around physical cards or tokens, generating added friction when those cards are lost, stolen, or simply forgotten at home.

Fortunately, biometrics have started to make a difference here, too. Fingerprint scanners, for example, have been integrated into a number of automated access control solutions over the past decade, letting authorized individuals easily gain access to a building without having to

carry around a physical key or fob. Just as a smartphone can store a registered user's biometric template and match subsequent fingerprint scans against it for authentication, a growing number of enterprise access control systems can store the biometric templates of hundreds or even thousands of individuals in order to let them gain access to facilities with a new level of convenience.

Of course, fingerprint authentication still requires a certain degree of friction, since a user needs to physically interact with a kiosk or other device. And with the COVID-19 pandemic having intensified the hygienic and public health risks associated with these kinds of authentication systems, many enterprise leaders are now looking for an even more frictionless – and indeed, safe – solution.

This is where today's sophisticated facial recognition technology offers a compelling answer. A subject needs only to face a camera in order to be authenticated, and there is no need to physically touch a biometric edge reader. This opens the door to even greater convenience, higher throughput, and, with the right level of technological sophistication, even greater security.
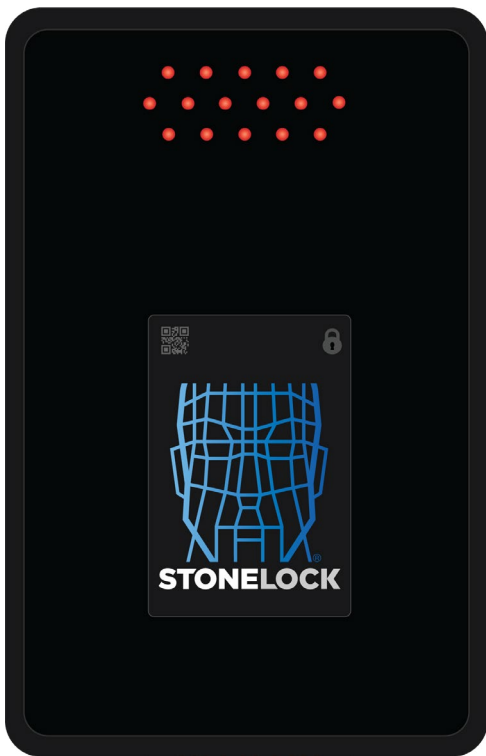
That having been said, not all facial recognition systems for access control are created equal. The worst of them can be fooled by a 2D printout of a registered user's face, and even with more discerning biometric technologies, a clunky user interface can cause frustration and seriously slow down user access. Contactless, face-based access control can deliver enormous benefits – but it requires a high level of care, sophistication and expertise to fully realize this potential.

Fortunately, at the cutting edge of biometric technology, contactless solutions are emerging that offer best-in-class security, privacy protection, and an easy and intuitive user interface – solutions like the StoneLock GO.

Seeing You Differently From a Safe Distance

The StoneLock GO is a fully contactless, face-based access control solution, offering touchless biometric security that can be trusted for safety, security, privacy, convenience and hygiene. The GO literally sees you differently than traditional biometric systems, using near-infrared sensors, not photo-matching, to automatically detect and match authorized user faces in nearly any work environment and in even the darkest lighting conditions. In many ways, this could be called "faceless" recognition given the technology does not rely on any specific facial features discernible to the human eye. With spoof-resistant technology and privacy-by-design architecture, it's strong enough to lock your doors, but when it comes to hygiene, cleanliness and social distancing, user experience is the most important consideration.

Enrolling and authenticating with the StoneLock GO

Employee authentication has a lifecycle – enrollment, subsequent authentication and offboarding. The entire lifecycle for a StoneLock GO user can be experienced conveniently and naturally while promoting general cleanliness and health, and observing even the harshest social distancing protocols.

The authentication lifecycle starts with enrollment. This is traditionally the most intensive and social aspect of the biometric user experience, requiring new employees to submit biometrics and identity data to an administrator in order to be issued a credential. With the StoneLock GO, the entire onboarding process for new users can be done remotely and without surface contact.

StoneLock's First Read Enrollment™ feature allows a new user to enroll at any designated StoneLock GO edge reader. The access control administrator sends the new user a QR code that, when presented to the edge

The StoneLock GO edge reader puts safety first with privacy-enhancing contactless biometrics.

reader, triggers enrollment prompts. The entire process only requires a user to look at the edge reader, and takes seconds to complete; meanwhile, the QR code can be issued remotely to a user's mobile device, meaning the administrator and employee never have to be in the same room. First Read Enrollment™ means zero risk of viral transmission.

Authentication with the StoneLock GO

Subsequent authentication is just as safe and even easier than enrollment. The StoneLock GO detects faces automatically, so when properly installed it can authenticate users before users reach the door. This means that even with high throughput environments like building entrances, the GO can keep traffic flowing in lineups observing the recommended six-foot social distance.

The StoneLock GO is a versatile biometric edge reader that can be installed at any physical access control point. On a medical cabinet, it can verify authorized pharmacists; at the front of an office building, it can ensure only onboarded employees and registered visitors can enter; paired with a turnstile, it can allow for fast and easy traffic flow with the assurance of a secured door; installed at a garage, the GO can eliminate the need for ticketed entry, expensive transmitters, or live guards stationed in booths. In every situation, authentication is touchless, clean and easy, keeping users, businesses and buildings safe from intruders both human and viral.

A Safe End to the Lifecycle

When it comes time to remove a user from the StoneLock GO, the same intuitive dashboard that issued authorization to the user during onboarding allows for easy de-enrollment in accordance with best privacy practices. The StoneLock GO does not store personally identifiable information, nor does it use biometric images; biometric data is stored as an encrypted template, meaning that it is essentially turned into an indecipherable code. Employee offboarding does not require any cards or tokens to be returned by an existing user. The administrator can deauthorize former staff with a few clicks safely and remotely, in compliance with the strictest user privacy regulations.

Seeing You Differently

Traditional biometric systems rely on biometric algorithms applied to 2D photographic and video images of faces. This method, while common, has a number of pitfalls in terms of both user experience and security assurance: for accurate and fast matching, traditional security cameras demand ideal lighting of the subjects, and are susceptible to presentation attacks that use high definition photos of authorized users to fool the algorithm. StoneLock uses near-infrared sensors for its face authentication, meaning that it can operate in complete darkness and it will not be tricked by spoof artefacts like photos or 3D printed masks.

The StoneLock GO sees your users and only your users, offering best-in-class user authentication from a distance for employees regardless of their unique needs. The edge reader's wide angle and mounting configuration options allow it to authenticate users of various heights, meaning users who might otherwise need alternate security options because of wheelchairs, crutches, or other accessibility needs are able to receive the same convenient and clean experience as every other person in a StoneLock-protected security system.

Convenience Beyond the User Experience

Frictionless Installation

One of the biggest obstacles to biometric adoption is installation. Thankfully, the StoneLock GO is almost as easy to deploy as it is to use. Offering seamless integration with third-party access control systems, GO edge readers can be installed wherever secure and accurate biometrics are needed. Take the first step to clean, contactless security today by visiting **stonelock.com**

The value proposition of biometric security speaks for itself, especially in the age of pandemic. But enterprises often encounter barriers when it comes to the installation and setup of biometric security – challenges exacerbated further by the social distancing measures in place to fight COVID-19. That's why a contactless, clean and secure biometric system must offer more than an optimal user experience: it needs to be as easy to implement as it is to use.

The saying goes: a chain is only as strong as its weakest link. And that's true for a security system. Not only does your front door need to be as secure as your garage door, but your CEO needs to be as comfortable with using it as your IT professionals, employees and customers.

The StoneLock GO is more than just a clean and contactless security technology for authentication at the door. It is an easy to implement biometric authentication factor that can meet the needs of everyone involved, from the front door to the corner office.

Meet the StoneLock GO personas: different professionals with specific needs, all of which can be met by the StoneLock biometric access control technology.

Persona	Authentication Management Needs	The StoneLock Difference
Christine *Human Resources Director*	When it comes to employee authentication in the enterprise, Christine cares about data privacy that's inclusive, compliant and safe. The Human Resources team is tasked with managing accessibility, access and employee protections that range from data privacy to safe work environments. That's why Christine wants a user inclusive, opt-in only system that maintains privacy and is fully ADA and cultural diversity compliant.	Delivering hassle-free high throughput authentication of users and simplified employee enrollment, the StoneLock GO is perfect for Christine's needs. The GO is not only frictionless but also contactless, eliminating the need to ever come in physical contact with the device. Contactless means improved sanitation and employee health – that's how the GO keeps employees safe. The near-infrared technology used by the StoneLock GO operates in the non-visible spectrum and the solution does not capture, let alone store any photos or videos, keeping employee information protected, as biometric keys cannot be reverse engineered from the data captured. The StoneLock GO is opt-in only and, of course, GDPR compliant.
Sheldon *IT Director*	The IT Department is responsible for ensuring businesses remain functional, data is protected, and enterprises can seamlessly communicate instantly to support network operations. That's why, more than anything, Sheldon cares about network security compliance.	All StoneLock data is stored in a proprietary, unrecognizable format. Moving AES 256 encrypted biometric templates securely across the network via TLS V1.2 connections, the GO is as safe as security gets. Supporting token-based authentication, QR Device Enrollment, and boasting unrecognizable user data thanks to its use of biometric keys, the StoneLock GO is perfect for Sheldon. By supporting the seamless and secure movement of hundreds of thousands of biometric templates across the enterprise – including the global movement of data – and maintaining high availability and connectivity, the StoneLock GO provides proactive monitoring that ensures the health of devices and safety of data.

Persona	Authentication Management Needs	The StoneLock Difference
Michael *Security Director*	Today's Security Director needs a trusted solution that keeps overhead costs down, while delivering the ultimate in authentication and security. Michael wants a security solution that's reliable and fast, and gives him the best bang for his buck without compromising on security.	In the world of security, nothing beats biometrics. Delivering a complete biometric-centric credentialing and access control solution with rapid, reliable authentication, effortless self-enrollment, and seamless third party access control integration, the StoneLock GO can help eliminate security vulnerabilities associated with PIN sharing or stolen/cloned cards without adding operational effort. For Michael, general performance characteristics are crucial, and the StoneLock GO makes every aspect of biometric management simple. User throughput, safety, low false acceptance rate (FAR) and spoof resistance make the StoneLock GO the answer to any security director's problems.
Mary *CEO*	The buck stops with today's CEO – and mistakes cannot be afforded when it comes to the ability of a business to operate, especially under the new pressures presented by the COVID-19 pandemic. That's why Mary cares most about having a feasible, best-in-class enterprise biometric management solution.	Now more than ever, Mary needs a contactless and privacy-centered approach to access management that will drive organizational efficiency and keep her workforce healthy. As a best-in-class enterprise biometric solution that addresses risks associated with access management, employee security and safety, the StoneLock GO meets all of Mary's demands. The StoneLock GO delivers ADA and GDPR compliance, while protecting 100 percent of its user-base. Moving to a contactless environment can help reduce the spread of infectious disease, keeping employees safe and productive, while proactively addressing potential liability issues with employees or customers returning to the business premises.

CONCLUSION
The StoneLock Difference

StoneLock GO is the answer to your privacy-enhancing and contactless security needs.

StoneLock GO is easy to deploy as a biometric authentication solution that enhances your existing physical access system. With intuitive and flexible onboarding, and the ability to detect user faces in total darkness, thanks to its near infrared technology, StoneLock's solution is versatile enough to bring convenience, security, and privacy peace-of-mind to your organization. That's the StoneLock difference.

Learn more about the StoneLock difference today at **stonelock.com**

Contact information: **sales@stonelock.com**

About StoneLock

A woman-owned business enterprise (WBE), StoneLock® is a global leader in the design and manufacturing of biometric access control reader technology. Providing a best-in-class solution for both security and privacy, StoneLock offers rapid, reliable authentication of users while providing ease of use for both users and administrators of the system. Together with the StoneLock® Gateway, a biometric-centric authentication solution, the StoneLock® GO delivers a contactless and utterly secure and private experience for users. More than 40 percent of Fortune 100 companies as well as government entities rely on StoneLock®, a privately held company, for the seamless protection of their most critical assets. For more information, visit www.stonelock.com