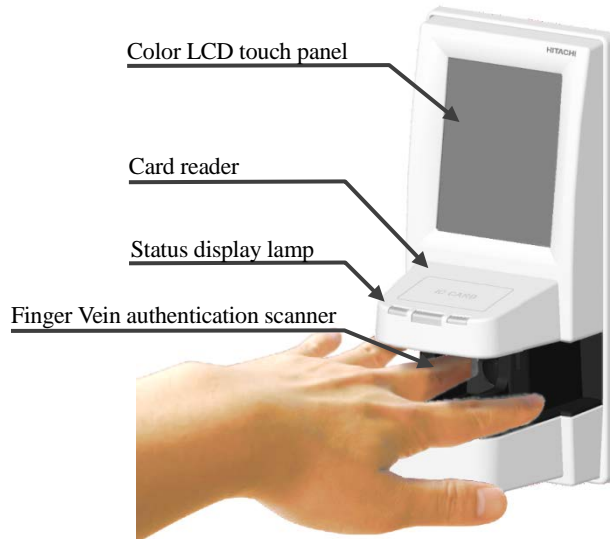


FOR IMMEDIATE RELEASE

Hitachi will Begin Sales of Physical Access Control System Featuring Newly Developed Finger Vein Authentication Terminal for Substantial Improvement in Authentication Accuracy and Speed

Smooth authentication of large number of people using only finger veins



Newly developed finger vein authentication terminal (built-in card reader) FVA-100JL
(The photo is for illustrative purposes only.)

Tokyo, July 1, 2015 --- Hitachi, Ltd. (“Hitachi” / TSE:6501) and Hitachi Industry & Control Solutions, Ltd. (“Hitachi Industry & Control”) announced today that they have developed a new type of finger vein authentication terminal offering substantially improved authentication accuracy and speed. The terminal is to be incorporated in the physical access control system, which will be sold in Japan from the middle of October, 2015. Moreover, the system will be introduced progressively overseas, mainly in Asia. Compared to the conventional models^{*1}, the new terminal uses a sequential fusion technique^{*2} to reduce the false acceptance rate^{*3} to 1/15 of the rate of existing models^{*1}, while increasing the authentication speed approximately three-fold. This enables the system to authenticate a large number of people smoothly using finger veins alone, without requiring any media such as an IC card.

The terminal has been made even more compact body, at less than half the width size of existing models^{*1}, enabling installation in a wider variety of locations. Furthermore, since it is compatible with the existing models^{*1} in terms of finger vein data and interface, it can be also used to update only or add further installations of the authentication terminal component of the access control system that has already been installed. Hitachi and Hitachi Industry & Control will promote sales of this system and other security solutions for facilities requiring a high level of security, such as food,

pharmaceutical and other such factories, data centers, research facilities, financial and public institutions, and public facilities such as airports.

Hitachi's finger vein authentication technology is characterized by being extremely difficult to impersonate or counterfeit compared with other biometric authentication methods based on fingerprints, facial recognition, or voice, since it uses a characteristic biological pattern that is inside the body. It is also highly accurate, uses compact equipment easy to install, and is simple to use. It has been introduced in many instances for various applications including the physical access control systems, ATMs at financial institutions, and PC logins. Looking ahead, an increase in demand will be expected in the areas, such as the Social Security and Tax Number System, protection of personal information, internal control, anti-terrorism measures, and increased security for crime prevention.

In the field of physical access control, the finger vein authentication system has been introduced in various security settings since their commercialization in 2002, including offices, server rooms, data centers, airports, and factories. Until now, the system that used finger veins alone has been used for situations requiring authentication of a small number of people. For situations involving a large number of people, the system combining finger veins and IC cards have been used. Recently, however, demand for authentication of large numbers of people using only finger veins has been growing. Reasons include needs to authenticate people in corridors without using IC cards or keypads, situations such as food processing plants where authentication media cannot be carried in due to hygiene controls, and difficulty in issuing and collecting IC cards in workplaces where staff numbers fluctuate significantly. To maintain security levels and carry out authentication of large numbers of people without causing stress, high precision and high-speed authentication is required.

To answer this demand, Hitachi and Hitachi Industry & Control have developed a new finger vein authentication terminal. The new terminal applies the continuous fusion technique^{*2} that is already used in embedded finger vein authentication devices^{*4} for equipment such as a safe and a terminal for time and attendance, and it reduces the false acceptance rate to 1/15 of the rate of existing models at approximately 1/15 million. It also utilizes a high-speed CPU to increase 1:N authentication^{*5} speed approximately three-fold to approximately 10,000 fingers per second. This enables high-precision and high-speed authentication with finger veins alone, even with a large number of users. Moreover, the new terminal can be installed in various locations as it features a vertical configuration that has made it even more compact body, by reducing the width to less than half of existing models at 89 mm, in compliance with IP44 water proof standard (splash proof), and an outer case that can be removed for painting. The operability and design have also been improved by adopting a color LCD touch panel.

Hitachi and Hitachi Industry & Control will incorporate the new terminal into the facility management solution, as well as the comprehensive physical access control solution for "Hitachi Access Control System". The two companies also plan to respond to the increasing needs for enhanced security at corporations and public facilities and furthermore contribute to the development of a safe and secure society.

Pricing and Sales release/Delivery

Item	Price	Starting Date of Sales release/Delivery
Finger Vein Authentication Terminal (Built-in card reader): FVA-100JL	Open pricing	Mid-October 2015 (planned)
Finger Vein Authentication Terminal (without card reader): FVA-100SL	Open pricing	Mid-October 2015 (planned)
Finger Vein Authentication Terminal for Overseas (Built-in card reader): FVA-100FL	Open pricing	Planned to be introduced sequentially from October 2015

Product specifications

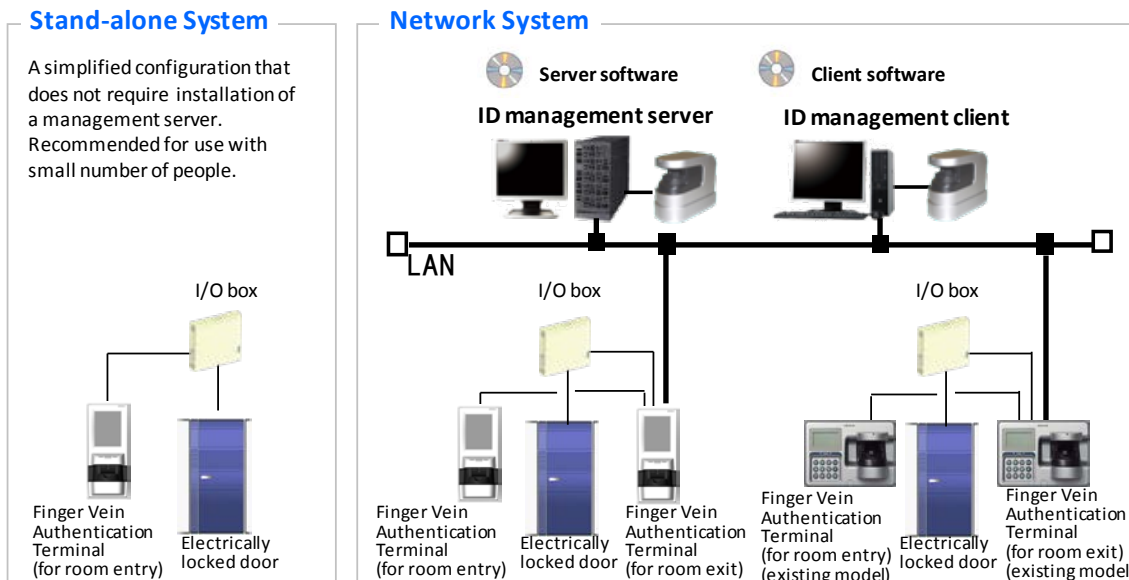
(may change without notice from the specifications at the time of announcement)

Item		Finger Vein Authentication Terminal (Built-in card reader)	Finger Vein Authentication Terminal (without card reader)
Model		FVA-100JL	FVA-100SL
Dimension		Approx. 89 mm × 196 mm × 85 mm (main body only)	
Authentication accuracy (*6)	False acceptance rate	0.0000067% (with sequential fusion) (1/15 million)	
	False rejection rate	0.01% (1/10 thousand)	
	Failure to enroll rate	Less than 0.03%	
Authentication speed	1:1 authentication	Approx. 0.8 seconds (from finger authentication to commencing door unlock)	
	1:N authentication	Approx. 10,000 fingers/second (verification only)	
Number of enrolled users	Finger-vein users	6,000 IDs (two fingers per ID)	
	Card users	50,000 IDs	-
Supported IC Cards (*7, *8)		FeliCa® ISO/IEC 14443 Type A (MIFARE®) ISO/IEC 14443 Type B	-
Number of fingers registered on IC card		Two fingers (only Hitachi-issued FeliCa card)	-
Reference types (*9)	1:1 authentication	ID + FV, ID + PIN, Card only Card + FV, Card + PIN	ID + FV, ID + PIN
	1:N authentication	1:N authentication, group authentication	
Power supply		DC 24 V ±5%	
Operating environment	Temperature / humidity	0°C to 40°C / 20% RH to 80% RH	
	Installation environment	Indoors, not exposed to water or direct sunlight (Incandescent light: up to 500 lx; sunlight: up to 1,000 lx)	
	Water and dust resistance	IP44 level (FVA-100JL/FVA-100SL)	

- *1: Finger vein authentication terminal: AFV-730-TC, FVTC720
- *2: Sequential fusion technique: an authentication technique for substantially improving authentication accuracy by enrolling two fingers for each person and using the second finger to authenticate if the person cannot be confirmed on the first authentication attempt.
- *3: False acceptance rate: the rate at which people are accepted by the system when it erroneously identifies them as someone else
- *4: Embedded finger vein authentication device: PCT-KCAX010
- *5: 1:N authentication: comparing the presented finger veins with N registered fingers
- *6: Measured on 1:1 authentication. Accuracy calculated using measurement methods based on international standard for biometrics accuracy evaluation ISO/IEC 19795-1
- *7: Customer-provided IC cards will require advance checking to ensure trouble free use during operation.
- *8: Use of type B IC cards requires the disclosure of the card technical specifications.
- *9: When sequential fusion technique is not used, Hitachi recommends the use with no more than 128 fingers for N in the case of 1:N authentication or for each group in the case of group authentication.

System configuration examples

- Stand-alone system capable of being enrolled and authenticated only using a finger vein authentication terminal without installation of a server.
- A network system involving configuration of a server to control up to 256 doors. It can be used in conjunction with existing models (AFV-730-TC).



Website about Hitachi Access Control Systems

<http://www.hitachi.com/isc-pss/>

Trademarks

- FeliCa is a registered trademark of Sony Corporation.
- MIFARE is a registered trademark of NXP Semiconductors N.V.
- Type-B is a contact-less IC technology developed by Motorola Mobility Holdings, Inc.

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges with our talented team and proven experience in global markets. The company's consolidated revenues for fiscal 2014 (ended March 31, 2015) totaled 9,761 billion yen (\$81.3 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes power & infrastructure systems, information & telecommunication systems, construction machinery, high functional materials & components, automotive systems, healthcare and others. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

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Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
