

## Multi-Modal Biometrics(Facial/Fingerprint) Time & Attendance/Access Controller

- MAC2000 : 125KHz (PSK Format/IDC Type) Proximity RF Card or PIN / Password / Fingerprint / Facial Recognition
- MAC2000SR : 13.56MHz (MIFARE, ISO14443 Type A Compatible) SMART Card or PIN / Password / Fingerprint / Facial Recognition



### System Features

- Multi-Modal Biometrics Access Controller (Facial/Fingerprint Recognition)
- Windows CE Operating System Applied for Higher System Performance and Stability
- PoE (Power over Ethernet) Feature: Provides Ethernet Communication and Power Supply via Network Cable (CAT5)
- Visual Image or Video of Access Status
- Visual Image (640x480/JPEG): Up to 6,000 Images Storable
- Video (640x480/15 Frames per Sec.)  
: Stores up to 1000 Videos for 3~10 Sec. Duration
- Multi-Language (English, Korean and User Defined) and Voice Guide Support
- Data Transmission Using Encrypted Algorithm (3DES)
- Anti-Passback Function
- Arm/Disarm Function
- Duress Mode / 2 Men-Operation Function
- Alerts when Door Opening Time Exceeds and Forced Door Open
- Tamper Switch (2EA)
- Advanced Security Time Schedule Configuration
- Stores up to 5 Fingerprints per ID
- Configuration Setting per ID (Time Schedule, Card Usage Expiration Date, Accessible Reader, Door Opening Time, etc.)
- Allows Registration of 10 Administrator Using the Fingerprint
- 4-Status Input Check (On/Off/Short/Cut)
- Designed to Withstand ESD (Electro Static Discharge) Shock
- Firmware Upgrade via Remote Control
- Door Phone Function
- Supports 26/34 Bit Wiegand Output Port (Usable to Reader)
- Compatible Software: STARWATCH ENTERPRISE, STANDARD, TIME PRO, TIME BASIC, iDWATCH VIEW PRO

Model	MAC2000	MAC2000SR
CPU	32 Bit ARM11 Processor	
OS	Microsoft Windows CE 6.0	
Memory	Program/Data	256M Byte DDR SDRAM/128M Byte Flash Memory
	Video Storage	2G Byte
Fingerprint Registration/Face Registration	10,000 ~ 25,000 / 10,000 ~ 25,000	
User IDs / Event Buffers	100,000 Users (Including Fingerprint and Face Registration) / 500,000 Events	
Fingerprint Template Size	500 Byte per Single Fingerprint	
Face Template Size	700 Byte per Single Face	
Reading Range	IDC80, IDC170 : Up to 10cm	ISC80 : Up to 10cm
Card Reading Time	30ms	
1:1 Verification/1:N Identification Time(Fingerprint)	Less than 1 Sec. / Less than 2 Sec.	
Power / Current	DC12V (or PoE) / Max. 800mA *PoE (IEEE802.3af compliant:12V/1A)	
External Reader Port	1 EA : 26 Bit Wiegand, 4/8 Bit Burst for PIN for Anti-Passback	1 EA : 34 Bit Wiegand, 4/8 Bit Burst for PIN for Anti-Passback
Communication/Communication Speed	Ethernet / 10/100 Mbps	
Input Port	4 EA : Exit Button, Door Sensor, AUX #1, AUX #2,	
Output Port	2 EA : 2 FORM-C Relay Output (COM, NO, NC) / DC 12V ~ 18V, Rating Max. 2A	
	2 EA : TTL Output / DC5V, Rating Max. 20mA 1 EA : Video Signal for DVR	
	1 EA : 26 Bit Wiegand	1 EA : 34 Bit Wiegand
USB Port	2 EA : USB 1.1 Support	
Camera / LCD	NTSC : CCD Color Board Camera(Total Pixel:410K) PAL : CCD Color Board Camera(Total Pixe :470K)/TFT Color(16.7M) LCD(320x240)	
Language   LCD Display/Voice Output	English (Default), Korean, User-Defined / English (Default)	
Keypad/Operating Temperature/	20 Numeric Keypad(Includes 4 Function Keys) / 0°~ +50°C	
Operating Humidity	10%~90% Relative Humidity Non-Condensing	
Color/Material/Dimension(WxHxT)	Black / Polycarbonate / 104 x 290 x 51.8mm	
Certification	FCC, CE, KCC, RoHS, UL	

Fingerprint Module Specification		Face Recognition Module Specification	
Resolution	500dpi	Resolution	768x494 pixels(NTSC), 752x582(PAL)
Capture Image Size	640 x 480 pixels	Capture Image Size	640 x 480 pixels
Extract Image Size	260 x 300 pixels	Face Recognition Size	700 Byte
Sensor Area	15 x 18.5mm	Sensor	SONY 1/3" CCD
Scanner	High Quality Optical Sensor	ESD	15 KV
ESD Tolerance	±8 KV		
FAR(False Acceptance Ratio)	0.001%		
FRR(False Reject Ratio)	0.1%		

Time Schedule			
Time Code	10	Holiday Code	10
Time Interval	5	Holiday	100