# CEM SYSTEMS

*From Tyco Security Products*

# emerald TS300f

## Intelligent Fingerprint Terminal
## Fully Integrated Biometric Solution

## Features that make a difference:

- Industry's most multifunctional access terminal with integrated biometrics

- Controller, advanced IP card reader and single biometric solution all in one that meets requirements for three stage identity authentication (card, PIN, and biometric verification)

- Fast card and fingerprint verification, uses 1:1 fingerprint match at the door

- Secure storage of fingerprints on the central AC2000 server and on the emerald internal database

- Fingerprint module gives a high resolution scan with FIPS201 approved biometric algorithm

- Durable enough for indoor or outdoor usage with an IK06 vandal resistance rating, and IP65 dust and water resistant rating

- User-friendly 4.3" capacitive LCD touch screen

- Intuitive Graphical User Interface enhancing user experience at the door

- Scramble keypad option for Personal Identification Number (PIN)

- Fully integrated VoIP intercom functionality

- Ability to run Remote Applications from AC2000 Central Database Server using secure communications

- Available with onboard PoE+ technology to power the terminal and additional door furniture

- PIR motion detection

- Remote upload of new firmware directly to the reader with on-screen indication

- Maintenance Information / Security Intelligence Point

- Ability to display live video at the workstation on intercom request, when interfaced with CCTV system (available with AC2000 v6.7 & upwards)

- Ability to display advertising/ information announcements and personal messages

emerald TS300f is the industry's most multifunctional touch screen access terminal with fully integrated biometric. Used in conjunction with CEM AC2000 security management system, the emerald TS300f uniquely provides users with built in Voice over IP (VoIP) intercom functionality and a range of remote server-based applications, all in one powerful device that controls access to restricted areas where an additional biometric layer of security is required.

Featuring a controller, advanced IP card reader and single biometric solution all in one, the emerald TS300f meets requirements for three stage identity authentication (card, PIN, and biometric verification) using one device.

The emerald TS300f has a bright 4.3" graphical LCD touch screen to display predefined messages and icons to cardholders depending on access privileges. It's built in mini PIR sensor provides energy saving motion detection and a multi-coloured LED provides users with a visual indication of access status. With hardened glass and an anti-glare coating, the emerald TS300f is durable enough for indoor and outdoor use.

## Off-Line Card Validation

The emerald TS300f has a large internal database that enables it to operate in off-line mode. In off-line mode the terminal can hold up to 123,000 card holder records with 2 fingerprint templates for each card holder.

## VoIP Intercom Functionality

The emerald TS300f terminal features a built-in microphone and speaker to support fully integrated access control and intercom functionality. This allows for two-way conversation between the user at the terminal and an AC2000 workstation operator, as well as remote door control. When interfaced with a CCTV system, the operator can also see who they are talking to through the live video feed (AC2000 v6.7 and upwards).

## Remote Applications
## AC2000 security intelligence at the door

The emerald TS300f uniquely provides users with a range of server-based Remote Applications at the door, which are restricted to certain cardholders who must first swipe their card or card+PIN. Using secure communications, these Remote Applications display real-time information and statistics to authorised cardholders such as 'Scheduled Visits', 'Card Status' and 'Change PIN'.

## Customised Remote Application Groups

Individual 'Remote Applications' can uniquely be assigned to customised 'Remote Application Groups'. This means that individual cardholders only have access to remote applications, depending on their assigned 'Application Group'.

## PIN & Fingerprint

This special emerald enhancement allows using emerald TS300f terminal without a card, where the user must enter their special designated 6-digit PIN number followed by a fingerprint verification. Where necessary, this removes the need for a physical card while maintaining a high level of security at the door.

## Fully integrated biometrics  & access control solution

The emerald TS300f features a controller, advanced IP card reader and fingerprint module all in one device.

## Single process & network solution

Fingerprint enrolment is captured and stored via the AC2000 access control system at the same time as cardholder enrolment. This offers clients a single solution and eradicates the requirement to purchase a separate biometric reader and software application to link to the access control system.

## Power over Ethernet Plus

The emerald TS300f is available with onboard Power over Ethernet Plus (PoE+) technology allowing the terminal and additional door furniture* to be powered using a single Cat 5e/6 cable at the door.

## Image on Swipe

Image on swipe offers improved security compliance at guarded checkpoints. With this feature the emerald is enhanced to provide a clear visible display of the cardholder's image. This image, which is imposed on the emerald screen, acts as a simple biometric verification which will be input via security personnel at guarded checkpoints.

## Multi Date Check

As an additional safety and security layer applied on top of system card validity checks, this mode allows the emerald to check the validity of any additional criteria such as training certificates or contracts that might be required at the site. System administrators can easily configure Multi Date Check using the dedicated intuitive AC2000 Web interface and run detailed reports on the configured Multi Date Check criteria and expiry dates, to ensure that personnel's certificates and permissions stay up to date. Whether it's applied for an individual cardholder or company-wide, additional date checks will take place after a valid transaction and a detailed result message will be displayed on emerald screen. This feature is only available with AC2000 v7.0 and above.

## Time & Attendance

In T&A mode, the emerald allows users to select either the IN or OUT transaction on a single terminal, before swiping their cards. Depending on the selection, the emerald will allocate valid transactions against either the IN or OUT swipe. System administrators can then easily report on the T&A activity using AC2000 Time and Attendance module or system reports. For highly secure locations, Time & Attendance mode can work in conjunction with Fingerprint verification and other modes such as PIN or Image on Swipe. (T&A is a dedicated door mode. emerald will not control door access when in T&A mode.)

## PIN as Card

PIN as Card is a special emerald feature, offering cardless verification using a unique 6 digit PIN to verify transactions. Where necessary, this removes the need for a physical card while maintaining security at the door.

## Requirements

• AC2000 Airport v7.0 and upwards
• AC2000 v7.0 and upwards
• AC2000 Lite v7.0 and upwards
• CEM S610f Validation Reader
• RTC Ethernet Reader Controller

## Specification

### Physical

Size . . . . . . . . . . . . . . . . . . . . . 240 x 108 x 49mm (At widest point)
Weight . . . . . . . . . . . . . . . . . . 600g (approx.)
Housing . . . . . . . . . . . . . . . . Flame retardant polycarbonate,
with UV stabilisation. RoHS compliant, and PBE/ PBDE free flame retardant system
LCD . . . . . . . . . . . . . . . . . . . Capacitive, light touch, 4.3″ Diagonal, 480 * 272 square pixel 16 bit colour
LED Indicator . . . . . . . . . . . . High Intensity multi-colour LED indicator
Colour . . . . . . . . . . . . . . . . . Black
Voltage . . . . . . . . . . . . . . . . . 10-14V DC

**PoE Version . . . . . . . . . . . . when powered from IEEE802.af compliant source**
Current . . . . . . . . . . . . . . . . . 350 - 550mA (Typical) 860mA (Peak)
Current available to
power door furniture . . . . . . . None

**PoE+ Version . . . . . . . . . . . when powered from IEEE802.at source**
Current . . . . . . . . . . . . . . . . . 350 - 550mA (Typical) 860mA (Peak)
Current available to
power door furniture . . . . . . . 650mA @12V*

### Environmental

IP Rating . . . . . . . . . . . . . . . . IP65
IK Rating . . . . . . . . . . . . . . . . IK06
Temperature . . . . . . . . . . . . . -15° to 50°C **

### Fingerprint***

Type . . . . . . . . . . . . . . . . . . . Optical
Resolution . . . . . . . . . . . . . . . 500 dpi
Sensing area . . . . . . . . . . . . . 16mm x 19.0mm
Image size (pixels) . . . . . . . . . 272x320
EER . . . . . . . . . . . . . . . . . . . . < 0.1%

### Functionality

Inputs . . . . . . . . . . . . . . . . . . Four analog inputs – voltage provided
Outputs . . . . . . . . . . . . . . . . . 2 relays volt free contacts (dry contact)

### Switchable wet outputs

Rating . . . . . . . . . . . . . . . . . . Internal : Internal: 12Vdc @ 1.3A
External: Up to 30Vdc @ 2A (60W)

**Memory** . . . . . . . . . . . . . . . 128 MB RAM, 256MB NAND Flash

**Expansion** . . . . . . . . . . . . . Micro SD slot for optional memory expansion. Micro SD card fitted.

**RTC Battery Backup** . . . . . . 3.0V rechargeable Lithium-ion

### Off-line Database

Cardholders . . . . . . . . . . . . . . 123,000 ( two fingerprint templates per cardholder )
Transactions . . . . . . . . . . . . . 50,000 min
Card technologies . . . . . . . . . MiFare (CSN), DESFire (CSN), CEM DESFire 3DES, CEM DESFire AES, iClass, iClass SE, Picopass

### Communication Interface

To Exit Reader . . . . . . . . . . . . RS485 (CEM S610 Exit Reader)
Wiegand (3rd party read heads)
Cable Connection . . . . . . . . . M3 Screw terminals
To System Host . . . . . . . . . . . 10/100 Base-T TCP/IP using CAT5e Unshielded twisted pair cable
Cable Connection . . . . . . . . . RJ45
Operating Modes . . . . . . . . . . Door Mode, Interlock, Control Post, Passenger, Multi-swipe, Global PIN, Entry Checklist Mode
Special Features . . . . . . . . . . 533 MHz DSP
FIPS201 approved algorithm
Robust optical Solid and scratch-free sensor surface
Reliable high quality fingerprint image for wet & dry fingers Sensor automatically optimises fingerprint image
Verification time (1:1) . . . . . . . < 0.55 sec

\* Only PoE+ IEEE802.at provides power for both the terminal and additional door furniture (current available to power door furniture: 650mA). Power requirements beyond this limit will require the DIU230
\*\* Biometric verification performance and accuracy can vary, subject to environmental conditions such as ice, snow etc.
\*\*\* Equal Error Rate. Manufacturer's data related to fingerprint match only. EER is dependent on databases

## Ordering Information

| Product Code | Description |
|---|---|
| TSR/300/115 | emerald TS300f Intelligent Fingerprint Terminal (Mifare CSN/DESFire CSN/CEM DESFire) |
| TSR/300/116 | emerald TS300f Intelligent Fingerprint Terminal (picopass) |
| TSR/300/118 | emerald TS300f Intelligent Fingerprint Terminal (iClass / iClass SE) |

## Related Products

AC2000
AC2000 Airport
AC2000 Lite

## Approvals

CE

FCC approval pending

**www.cemsys.com**