

# emerald TS100

## Intelligent Access Terminal



### Features that make a difference:

- User-friendly 4.3" capacitive LCD touch screen
- Intuitive Graphical User Interface enhancing user experience at the door
- Ethernet Card Reader & Controller in one device
- Scramble keypad option for Personal Identification Number (PIN)
- PIR motion detection
- 10/100 Mbps Ethernet host connection
- Available with onboard PoE+ technology to power the terminal and additional door furniture\*
- Four analog inputs to monitor alarm conditions and two changeover, dry contact relay outputs to activate door strike or other equipment
- Remote upload of new firmware directly to the terminal with on-screen indication
- Off-line database for 250,000 cardholder records
- Support for a range of smart card technologies
- Easy to install
- Display Advertising/ Information Announcements (available with AC2000 v6.7 & upwards)
- Personalized messages (available in AC2000 v7 & upwards)

emerald TS100 is part of a range of advanced, intelligent touch screen access terminals. Used in conjunction with the CEM AC2000 access control and security management system, the TS100 controls access to restricted areas while providing users with an innovative and future proof access control solution.

The TS100 has a bright 4.3" graphical LCD touch screen to display predefined messages and icons to cardholders depending on access privileges. For example 'Expiring Card' and 'Wrong Door'. Its built in mini PIR sensor provides energy saving motion detection, with the LCD screen automatically lighting up upon an approaching person. The TS100 also features a multicoloured LED light which provides users with a visual indication of access status.

To enhance user experience at the door, the TS100 features an information icon that can assist users with helpful guidance. The TS100 also offers high levels of security at the door using the latest technologies, including a scramble keypad option for PIN verification. With hardened glass and an anti-glare coating, the TS100 is durable enough for indoor and outdoor use.

A powerful IP card reader and controller in one device, the TS100 features an on-board 10/100Mbps Ethernet connection and communicates directly with the AC2000 host server.

The TS100 is designed with internal reading support for 13.56MHz MiFare (CSN), DESFire (CSN), iClass and iClass SE smart cards.

### LCD Touch Screen

The TS100 has a bright, touch sensitive, scrollable 4.3" graphical LCD screen. With hardened glass and an anti-glare coating, TS100 displays predefined messages and icons to cardholders depending on their privileges e.g. Wrong Door, Lost/ Stolen Card and Access Granted. The screen can also be used to display advertising and information announcements when idle.

### High Security

The TS100 features a fully secure connection to the CEM RTC (Ethernet controller software). This connection is secured with 128-bit encryption. For sensitive areas that require an additional layer of security, the TS100 features a PIN option, as well as a unique Scramble keypad option.

### Off-Line Card Validation

The TS100 has a large internal encrypted database that enables it to operate in off-line mode. The cardholder database is downloaded to the terminal's internal memory to ensure that up-to-date card information is stored. In off-line mode the terminal can hold up to 250,000 cardholder records.

### Card Reader and Controller in One

The TS100 communicates directly to the CEM AC2000 server using Ethernet connectivity. This removes the need for an additional controller in the system design.

## Power over Ethernet Plus

The TS100 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.

## Easy to Install

The TS100 is designed to be easy to install, without the requirement for specialist tools. Installers simply assign an IP address via the terminal's user friendly interface, which then connects automatically to the AC2000 server over an Ethernet network. Once powered, the terminal self configures and quickly receives a full cardholder database.

## Remote Configuration

Acting as a maintenance intelligence point, the TS100 network settings and operational door modes can be remotely configured, with all changes automatically uploaded to the access control server. Multiple door locks include 'Interlock Mode', 'Control Post', 'Multi-swipe', 'Entry Checklist Mode' and 'Passenger Mode'.

## Onboard Card Reading Technologies

The TS100 supports 13.56MHz MiFare (CSN), DESFire (CSN), iClass and iClass SE smart cards. An additional Wiegand input is supported for connecting external 3rd party non-keypad exit read heads or additional security devices, I/O's and serial channels (RS485).

## Personalized Messages

A specific personalized message for an individual card holder can be displayed directly on the emerald terminal. AC2000 system administrators are able to configure a message that is then assigned to a personnel record. When the cardholder swipes their card at any emerald terminal, the personal message will be displayed with an acknowledgement button. If the message is not acknowledged, it will reappear on the emerald terminal each time the cardholder swipes, until the message is acknowledged or removed by the system administrator. This feature is only available with AC2000 v7 and above

## Custom Logo

The emerald intelligent access terminal features the ability to display a customized logo at the centre of the emerald home screen. The custom logo can be uploaded to the system via the AC2000 WEB application and will be displayed on the emerald terminal when idle. This feature is only available with AC2000 v7 and above and requires a separate system license.

## 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.

## Emerald Link

Emerald link allows operators to activate passenger mode at both sides of the door while providing visual feedback of the remaining passenger time. Emerald Link is the deployment of two emeralds back to back in passenger mode to control a single door. The emeralds communicate with each other over Ethernet using secure 128-bit AES encryption. Alarms generated on either emerald are visually displayed on both sides of the door.

## Requirements

- AC2000 Airport v6.6 and upwards
- AC2000 v6.6 and upwards
- AC2000 Lite v6.6 and upwards
- RTC Ethernet Reader Controller

## Specifications

### Physical

Size	157 x 108 x 49mm (At widest point) (6.1 x 4.25 x 1.9")
Weight	< 450g (16oz) with connectors
Housing	Flame retardant polycarbonate containing fully encapsulated electronics
LCD	Capacitive, light touch, 4.3" Diagonal, 480 * 272 square pixel 16 bit colour
Color	Black
Voltage	10 – 14V DC

### PoE Version . . . . .when powered from IEEE802.af compliant source

Current	.350mA (typical) 500mA (peak)
Current available to power door furniture	.None

### PoE+ Version . . . . .when powered from IEEE802.at PoE+ compliant source

Current	.350mA (typical) 500mA (peak)
Current available to power door furniture	.850mA*

### Environmental

IP Rating	.IP65
Temperature PoE (IEEE802.3af)	..-20° to 70°C (-4° to 158°F)
Temperature PoE+ (IEEE802.3at)	..-25° to 55°C (-13° to 131°F)

### Functionality

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

### Switchable wet outputs

Rating	Internal: 12Vdc @ 1.6A External: Up to 30Vdc @ 2A (60W)
Memory	128 MB RAM, 256MB NAND Flash
Expansion	Micro SD slot for optional memory expansion
RTC Battery Backup	3.0V rechargeable Lithium-on

### Off-line Database

Cardholders	Up to 250,000 cardholders
Transactions	Up to 50,000 transactions
Card technologies	MIFARE (CSN)/ DESFire (CSN)/ CEM DESFire/ iCLASS/ iCLASS SE

### Communication Interface

To Exit Reader	RS485 (CEM S610 Exit Reader/ CEM S700 Exit Reader) Wiegand (3rd party read heads)
Cable Connection To System Host	M3 Screw terminals 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

### Regulatory

Agency Certifications	FCC Part 15**
	CE
	UL 294**

\* Only PoE+ IEEE802.at provides power for both the terminal and additional door furniture (current available to power door furniture: 850mA). Power requirements beyond this limit will require the DIU230.

\*\* MiFare/DESFire version only

## Ordering Information

Product Code	Description
TSR/100/105	emerald TS100 terminal (MIFARE CSN/ DESFire CSN/ CEM DESFire)
TSR/100/106	emerald TS100 terminal (PicoPass)
TSR/100/108	emerald TS100 terminal (iCLASS/ iCLASS SE)
TSR-LOGO	emerald Custom Logo License
TSR/075/000	emerald Mounting Kit - For uneven surfaces. Includes a metal mounting plate, 2 gaskets and 4 machine screws and washers

To order contact [cem.sales@tycoint.com](mailto:cem.sales@tycoint.com) or call +44(0) 2890 456 767

## Related Products



AC2000  
AC2000 Airport  
AC2000 Lite

## Approvals



Applies to MiFare/DESFire version only

[www.cemsys.com](http://www.cemsys.com)