

# emerald TS200

## Intelligent Access Terminal with VoIP Intercom



### Key Features

- 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
- Fully integrated built-in VoIP intercom functionality
- 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

emerald TS200 is part of a range of advanced, intelligent touch screen access terminals. Used in conjunction with the CEM AC2000 security management system, the TS200 controls access to restricted areas while providing users with card reader and controller functionality and Voice over IP (VoIP) intercom, all in one powerful device.

The TS200 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 touch screen automatically lighting up upon an approaching person. The TS200 also features a multicoloured LED light which provides users with a visual indication of access status. With hardened glass and an anti-glare coating, the TS200 is durable enough for indoor and outdoor use.

As a powerful IP card reader and controller in one, the TS200 features an on-board 10/100Mbps Ethernet connection and communicates directly with the AC2000 host server.

Utilising a built-in microphone and speaker, the TS200 provides fully integrated audio intercom functionality at the door, enabling communication between the terminal and a dedicated CEM Intercom workstation.

The TS200 is designed with internal reading support for 13.56MHz MiFare (CSN), DESFire (CSN), iClass and iClass SE smart cards.

### VoIP Intercom Functionality

The TS200 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. Running an AC2000 workstation Intercom application, system operators will receive a pop-up notification of requested audio help. The operator will then have the ability to accept or reject the call request and can execute a 'Oneshot' command to remotely open the door. The TS200 allows live video feed on the

## Key Features Continues

- Remote upload of new firmware directly to the reader with onscreen indication
- Off-line database for 250,000 cardholder records
- Support for a range of smart card technologies
- Easy to install
- Ability to display live video at the workstation on intercom request, when interfaced with CCTV system (available with AC2000 v6.7 & upwards)
- Display Advertising/ Information Announcements (available with AC2000 v6.7 & upwards)
- Personalized messages (available in AC2000 v7 & upwards)

operator workstation from an interfaced CCTV system when a user presses the intercom request button. This allows the operator to see who they are talking to. With AC2000 v6.8 (and upwards) the operator can also choose to initiate a call with the emerald terminal.

### High Security

The TS200 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 TS200 features a PIN option, as well as a unique Scramble keypad option.

### Off-Line Card Validation

The TS200 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.

### Power over Ethernet Plus

The TS200 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.

### LCD Touch Screen

The TS200 has a bright, touch sensitive, scrollable 4.3" graphical LCD screen. With hardened glass and an anti-glare coating, TS200 displays predefined messages and icons to cardholders depending on their privileges e.g. Wrong Door, Lost/Stolen Card, Expiring Card and Access Granted. The screen can also be used to display advertising and information announcements when idle.

## Easy to Install

The TS200 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 TS200 network settings and operational door modes can all 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'.

## 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 available in 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 available on AC2000 v7 and above, and requires a separate system license.

## Checklist Mode

The emerald intelligent access terminal features the ability to create a series of user defined questions and associated images that cardholders must answer positively to before access is granted. This feature can be used to improve company compliance and for health and safety enforcement. For example, staff may require personal protection equipment (PPE) before entering a restricted or hazardous zone, which can be included as a reminder as part of an emerald checklist.

The selections made by users of Checklist mode are stored on the AC2000 server, also recording the questions which receive a Negative answer.

## 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.

## 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 x 272 square pixel 16 bit colour
Color	Black
Voltage	10 – 14V DC
Power	
PoE Version	when powered from IEEE802.af compliant source
Current	350mA (typical) 500mA (peak)
Current available to power door furniture	None
PoE+ Versions	when powered from IEEE802.at PoE+ compliant source
Current	350mA (typical) 500mA (peak)

Current available to power door furniture	850mA*
<b>Environmental</b>	
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)
<b>Functionality</b>	
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
<b>Off-line Database</b>	
Cardholders	Up to 250,000 cardholders
Transactions	Up to 50,000 transactions
Card technologies	MIFARE (CSN)/ DESFire (CSN)/ CEM DESFire/ iCLASS/ iCLASS SE
<b>Communication Interface</b>	
To Exit Reader	RS485 (CEM S610 Exit Reader/ CEM S700 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
Intercom	SIP, VoIP, VOX 2-way Half-duplex or Push-to-Talk (configurable), G.711 Audio Codec, Entry Checklist Mode
<b>Regulatory</b>	
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/200/105	emerald TS200 terminal (MIFARE CSN/ DESFire CSN/ CEM DESFire)
TSR/200/106	emerald TS200 terminal (PicoPass)
TSR/200/108	emerald TS200 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

## Requirements

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

## Related Products



- AC2000
- AC2000 Airport
- AC2000 Lite



emerald TS300f

---

## About Johnson Controls

Johnson Controls is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. Our 120,000 employees create intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities. Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat.

For additional information, please visit [www.cemsys.com](http://www.cemsys.com) or follow CEM Systems on LinkedIn and Twitter.

© 2021 Johnson Controls. All rights reserved. Product offerings and specifications are subject to change without notice. Actual products may vary from photos. Not all products include all features. Availability varies by region; contact your sales representative.

CEM/B/151 Rev P

The power behind **your mission**