# emerald™ TS300
## Intelligent Access Terminal with VoIP Intercom & Remote Applications

### Features that make a difference:

- Industry's most multifunctional access terminal

- 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)

- 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

- Four analogue 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 reader with on-screen indication

- Off-line database for 250,000 cardholder records

- Support for a range of smart card technologies

- Maintenance Information / Security Intelligence Point

- 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)

- Ability to display advertising/ information announcements (available with AC2000 v6.7 & upwards)

emerald™ TS300 is the industry's most multifunctional touch screen access terminal. Used in conjunction with CEM AC2000 security management system, the TS300 uniquely provides users with a card reader and controller, built in Voice over IP (VoIP) intercom functionality and a range of remote server-based applications, all in one powerful device.

The TS300 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 'Lost/Stolen Card'. Its built in mini PIR sensor provides energy saving motion detection and a multicoloured LED provides users with a visual indication of access status. With hardened glass and an anti-glare coating, the TS300 is durable enough for indoor and outdoor use.

A powerful IP reader and controller in one, the TS300 terminal features an on-board 10/100Mbps Ethernet connection and communicates directly with the AC2000 host server. Utilising a built-in microphone and speaker, the TS300 provides fully integrated audio intercom functionality at the door, enabling communication between the terminal and a dedicated CEM Intercom workstation.

One of the unique features of the TS300 is the ability to run Remote Applications that are hosted on the AC2000 central server. Access to the Remote Applications can be restricted to certain cardholders who must first swipe their card or card+PIN. These Remote Applications display critical statistics and important information for system maintenance, such as top system alarms and most recent alarms, directly at the door. Additional applications include 'First and Last swipes' for time and attendance purposes, 'Your Card Details' and 'Scheduled Visitors.

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

The TS300 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' which allows users to proactively change their own PIN without contacting the system operator. Various maintenance applications are also available to allow engineers to locally diagnose the terminal. These applications include 'Recent Alarms', 'Devices with most alarms' and 'Device settings'. An 'Info' Application also enables administrators to post general company information on the emerald terminal, such as health & safety information. Users can also use the Room Booking application to reserve predefined rooms for a period of time. Users can view the 'All Room Booking' application or use the 'This Room Booking' application, which shows bookings for the room the emerald device in assigned to.

## 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 'Application Group' assigned. For example, system administrators can create an 'Engineer' group where engineers can only get access to maintenance applications at the door.

## Off-Line Card Validation

The TS300 has a large internal database that enables it to operate in off-line mode. In off-line mode the terminal can hold up to 250,000 cardholder records.

## LCD Touch Screen

The TS300 has a bright, touch sensitive, scrollable 4.3″ graphical LCD screen. With hardened glass and an anti-glare coating, TS300 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.

## VoIP Intercom Functionality

The TS300 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. The operator has the ability to accept or reject the call request and can execute a 'Oneshot' command to remotely open the door. With AC2000 v6.8 the operator can also choose to initiate a call with the emerald terminal. 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).

## Power over Ethernet Plus

The TS300 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 TS300 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.

## Requirements

- AC2000 AE v6.6 software & upwards
- AC2000 SE v6.6 software & upwards
- AC2000 Lite v6.6 software & upwards

## Specification

### 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 |
| Colour | 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) 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 |

* 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.

### Ordering Information

| Product Code | Description |
|---|---|
| TSR/300/105 | emerald TS300 terminal (MiFare CSN/ DESFireCSN/ CEM DESFire) |
| TSR/300/106 | emerald TS300 terminal (picopass) |
| TSR/300/108 | emerald TS300 terminal (iClass/ iClass SE) |

## Related Products



AC2000



AC2000 Airport



AC2000 Lite