



BOSCH
Invented for life

Access Control Systems

www.boschsecurity.com

Product Overview



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Bosch Access Control Systems

Today's challenges

Why do you need an access control system?

Increasing demand for security

Growing need to restrict access to buildings and areas

Mechanical access systems are prone to misuse

More flexible working time models



Why is access control so important?

Typical applications

Access control is one of the most important subsystems in a security installation



Access in a company



Protect secure areas



Unlock doors in case of an emergency



Bosch Access Control Systems

Reliable, versatile, scalable

Access Control is a key pillar of today's security. The growing need to control access to and within buildings and areas, more flexible working time models and the limitations of mechanical locks make a modern and reliable access control system indispensable. Bosch offers complete, reliable and scalable access control solutions for any medium to large sized application.



Key advantages of access control

Investing in the right technology is central to the protection of your employees, site visitors and ultimately the success of your company. While you naturally want your business premises to be as open and welcoming as possible you need to ensure maximum protection against unauthorized intruders.

Comprehensive portfolio for every application

Bosch Access Control solutions offer you a flexible system for any project.

Our portfolio includes all access control components from different software options and controllers to a wide range of readers and credentials to comply with your individual needs. State of the art security features and encryption functionalities make sure your data is protected and privacy regulations are fulfilled.

Thanks to the scalability of the components, the system grows according to your security needs.

Our support and training team will be happy to consult you to create the system that fits your requirements.



Airports



Stadiums



Office buildings



Factories



Healthcare



Hotels



Energy and utilities



Education

Our Access Control software options

The Access Engine of the Building Integration System is an ideal access control software solution for large and complex projects, such as airports or stadiums. Our software solution for medium to large sized projects such as offices or healthcare facilities is the Access Management System. The Access Professional Edition is the ideal choice for entry-level projects such as office buildings or retail stores. All software alternatives work with our Access Modular Controller, and can be combined with the wide range of our reader and credential portfolio.

Proven expertise in the security industry

- ▶ Vertical solutions expert
- ▶ More than 35 years of experience in access control
- ▶ Worldwide support near you



Software

Access Professional Edition (APE)

for medium sized projects

- ▶ Easy-to-use software with intuitive graphical user interface (GUI)
- ▶ Integration of third-party functionalities such as time and attendance and other HR systems via Application Programming Interface (API)
- ▶ Support of Open Supervised Device Protocol (OSDPv2 secure channel) for bi-directional encrypted communication between reader and controller
- ▶ Suitable for office buildings, retail, etc.
- ▶ Administrates up to:
 - 512 readers
 - 10,000 cardholders
 - 16 concurrent workplace clients



Simplicity

User-friendly tools and GUI for easy installation, configuration and operation.



Future-proof investment

Minimize your initial investment with APE and switch to a more powerful AMS or BIS-ACE solution as your needs demand – using the same hardware components.

Access Management System (AMS)

for medium to large sized projects

- ▶ Easy-to-use, scalable and resilient software with intuitive, modern graphical user interface (GUI)
- ▶ Integration of third-party functionalities such as time and attendance and other HR systems via API
- ▶ Integration with BVMS and other video management systems
- ▶ Integration with B and G Series Intrusion Control Panels
- ▶ Support of Open Supervised Device Protocol (OSDPv2 secure channel) for bi-directional encrypted communication between reader and controller
- ▶ Encrypted database and communication at all stages
- ▶ Suitable for office and governmental buildings, educational institutions, hospitals, etc.
- ▶ Administrates up to:
 - 400 divisions
 - 10,000 doors
 - 200,000 cardholders
 - 40 concurrent workplace clients



Simplicity

Efficient and user-friendly tools to configure the system and an intuitive, modern GUI for easy and convenient operation.



Maximum resilience

An additional third layer of security – Master Access Controller – between the server and the controllers ensures controller communication, even if the server fails.



Future-proof investment

AMS grows with your needs thanks to the three different license editions: you can start with Lite and switch to Plus or Professional when your security requirements grow. If your needs grow even further, you even switch to BIS-ACE.

Building Integration System – Access Engine (BIS-ACE)

for large and complex projects

- ▶ Resilient and highly scalable software
- ▶ Integration of Bosch video, fire, intrusion and public address systems via the Building Integration System (BIS)
- ▶ Integration of third-party products such as time and attendance, visitor management and building automation via open protocols (OPC) and API
- ▶ Support of Open Supervised Device Protocol (OSDP V2 secure channel) for bi-directional encrypted communication between reader and controller
- ▶ Suitable for public transport, critical infrastructure, industry, etc.
- ▶ Multi-server topology support
- ▶ Administrates up to:
 - 400 divisions
 - 10,000 doors per server
 - 200,000 cardholders per field controller (AMC)
 - 80 concurrent workplace clients per server
 - 200,000 detectors per server



Flexibility and integration

Modular system to combine different security, safety and building management functions from Bosch and third parties to create exactly the solution you need.



Maximum resilience

An additional third layer of security – Master Access Controller – between the server and the controllers ensures controller communication, even if the server fails.



Future-proof investment

BIS-ACE grows with your requirements, allowing you to set-up a large multi-server system which can be enhanced with various integrations at any time.

Access control functionalities at a glance*

Basic access control functionalities

Single authentication (identification)

- ▶ Various identification modes are possible: card, PIN, biometric
- ▶ User configures verification or identification mode for reader
- ▶ After authentication, reader sends information to controller and controller verifies with the server if the user is authorized to enter
- ▶ Access is granted or denied by the controller

Multi-factor authentication (verification)

- ▶ Two or more authentication features need to be provided by the user, e.g. card and PIN
- ▶ Access can only be granted if both features match

Administrative functionalities

Employee onboarding and offboarding

- ▶ One enrollment dialog to easily collect and upload all cardholder information such as data, photo, PIN codes and biometric features
- ▶ Enrollment of secured Bosch code card data from MIFARE DESFire cards supported
- ▶ Cardholders can be assigned more than one card and even threat alert cards
- ▶ For VIP cardholders, special functionalities can be configured, e.g. the right to permanently open a door or the automatic calling of an elevator when entering a building



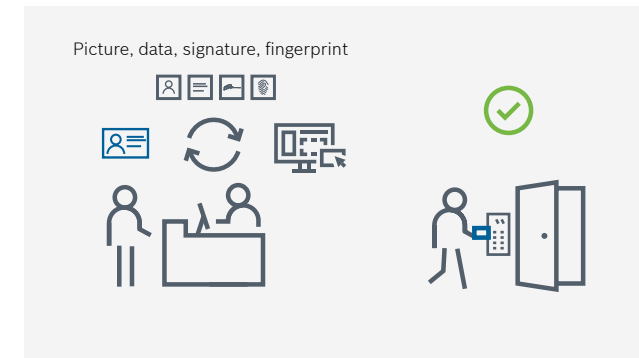
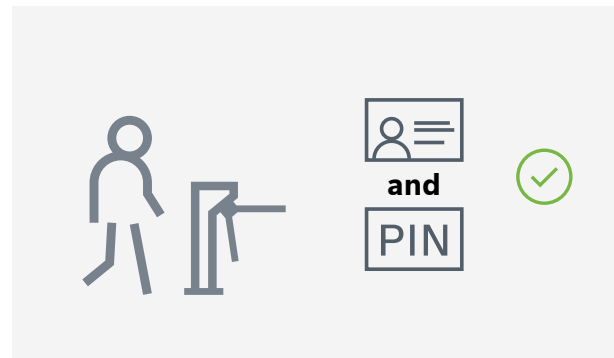
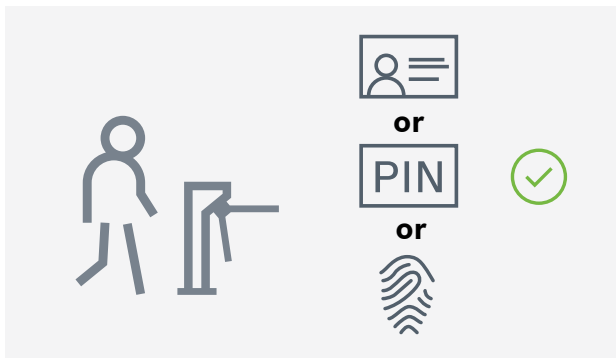
- ▶ **Convenience**
- ▶ **Speed**



- ▶ **High level of security**



- ▶ **Efficiency**
- ▶ **Facilitation of compliance regulations**



* All functionalities are available in all three software options (APE, AMS, BIS-ACE)

Advanced access control functionalities

Anti-passback

- ▶ User 1 scans his badge and enters an access-controlled area
- ▶ User 2 does not have authorization to enter the premise
- ▶ User 1 hands his badge to user 2 so he can enter the access-controlled area as well
- ▶ Anti-passback ensures that re-entry is only possible if the cardholder had checked out before or a defined time period is exceeded
- ▶ User 2 is denied access



- ▶ **High level of security**
- ▶ **Prevention of misuse of cards**

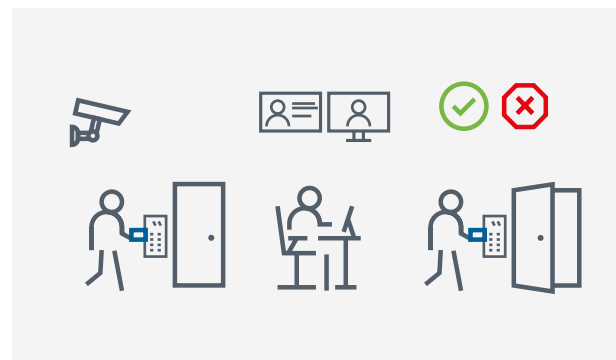


Video verification

- ▶ User requests access with credential
- ▶ Video camera is installed at the door, providing the security operator with live video stream
- ▶ Cardholder image and information such as name or employee number and live video stream pop up in the operator's event list
- ▶ Operator verifies if user at the door matches authorized cardholder
- ▶ Operator grants or denies access



- ▶ **High level of security**
- ▶ **Prevention of misuse of credentials**

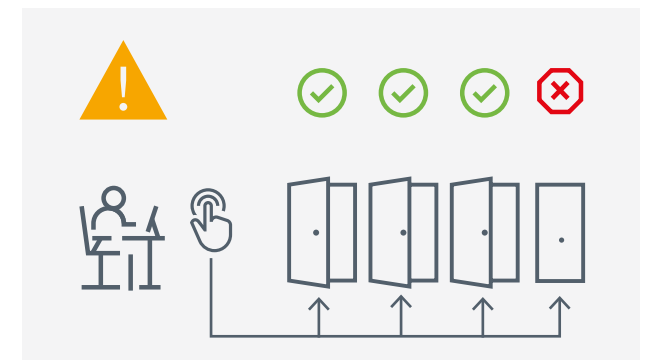


Threat level management

- ▶ High or low threat situation occurs
- ▶ Behavior of all defined doors changes with one click at the operator workstation, by pushing an emergency button or by presenting a specially configured "emergency" card to a reader
- ▶ Safety measures are initiated within seconds by the security operator, a cardholder with an emergency card or by anyone pushing the emergency button
- ▶ Doors can be preconfigured to behave in different modes: e.g. lockdown or permanent open mode
- ▶ Possible high threat levels: attack, fire
- ▶ Possible low threat levels: sports event, family day in a company, parents' evening in a school

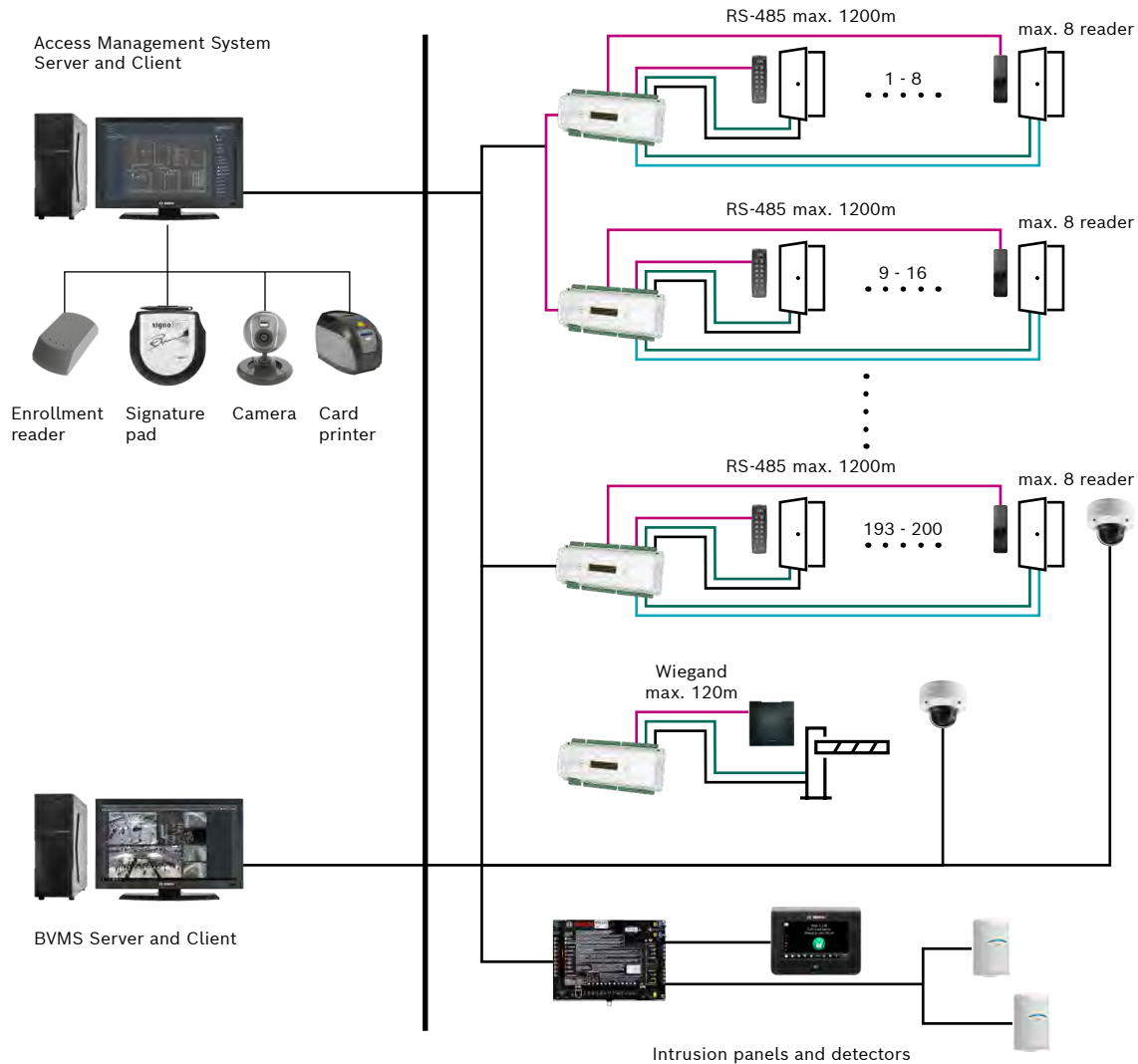


- ▶ **High level of safety on site**
- ▶ **Fast reaction in critical situations**



System design example

Access Management System



System description / application

System size

- ▶ 150 doors
- ▶ 1,200 cardholders
- ▶ Three operators

| AMS features | AMC features | Reader features |
|--|---|---|
| <ul style="list-style-type: none"> ▶ Max. 10,000 doors ▶ Max. 200,000 cardholders ▶ 5 cards per person ▶ 1,024 authorizations per MAC ▶ Graphical location map ▶ Video integration for video verification via BVMS ▶ Intrusion integration via G Series | <ul style="list-style-type: none"> ▶ 2 RS-485 buses ▶ 8 inputs ▶ 8 relays ▶ TCP/IP, RS-485 connection | <ul style="list-style-type: none"> ▶ Support of OSDPv2 secure channel ▶ Outdoor resistant (up to IP67) ▶ Multitechnology support (125kHz and 13.56MHz) ▶ Wiegand and RS-485 support ▶ Keypad or fingerprint for verification |

Further elements

| Further elements | Item Type |
|-------------------------------|--|
| Readers | ARD-AYBS6380, ARD-FPBEW2-H2, ARD-SER90-WI |
| Lock | 4710760066 |
| Magnet contact | ISN-CSM35-W |
| REX button | 4710760047 |
| AMS Software | 1 x AMS-BASE-PLUSxx*, 1 x AMS-XDRS-128Vxx, 2 x AMS-XCLI-1Vxx |
| Controller | APC-AMC2-4R4CF, APC-AMC2-4WCF |
| Power supply | APS-PSU-60 |
| Battery | D126 |
| BVMS Software | MBV-BPLU-100 |
| Cameras | NDE-8504-R |
| Intrusion control panel | B8512G |
| Intrusion touch screen keypad | B942 |
| Intrusion detectors | ISC-CDL1-W15G |

* Version dependent

Software licenses

APE licenses

| | ASL-APE3P-BASE | ASL-APE3P-BEXT | | | | | | | |
|--------------------|------------------------------|-------------------------------------|---------------------------------|-----------------------------|---------------------------------------|---------------------------------------|------------------------------------|---------------------------------------|-------------------------------------|
| Base licenses | License for basic package | License for extended basic package | | | | | | | |
| Expansion licenses | ASL-APE3P-RDR | ASL-APE3P-CLI | ASL-APE3P-VIDB | ASL-APE3P-VIDE | ASL-APE3P-OLSB | ASL-APE3P-OLSE | ASL-APE3P-RDRL | ASL-APE3P-XPRO | ASL-APE3P-API |
| | License for reader expansion | License for user / client expansion | License for video basic package | License for video expansion | License Pegasys offline basic package | License for Pegasys offline extension | License for reader limit up to 512 | License for Milestone XProtect Plugin | License for SDK for cardholder data |

AMS licenses

| | AMS-BASE-LITE _{xx} * | | AMS-BASE-PLUS _{xx} | | AMS-BASE-PRO _{xx} | | | | | | | | |
|--------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|------------------------------------|---------------------------|---------------------------|
| Base licenses | Lite license | | Plus license | | Pro license | | | | | | | | |
| Expansion licenses | AMS-XDIV-1V _{xx} | AMS-XCLI-1V _{xx} | AMS-XCLI-5V _{xx} | AMS-XCRD-100V _{xx} | AMS-XCRD-1KV _{xx} | AMS-XCRD-10KV _{xx} | AMS-XCRD-50KV _{xx} | AMS-XDRS-32V _{xx} | AMS-XDRS-128V _{xx} | AMS-XDRS-512V _{xx} | AMS-XOND-25V _{xx} | AMS-XMAC-1V _{xx} | AMS-XMAC-5V _{xx} |
| | License for 1 division | License for 1 operator client | License for 5 operator client | License for 100 ID cards | License for 1,000 ID cards | License for 10,000 ID cards | License for 50,000 ID cards | License for 32 doors | License for 128 doors | License for 512 doors | License for 25 remote online doors | License for 1 MAC server | License for 5 MAC server |

BIS-ACE licenses

| | BIS 4.x* Basic License | | | | | | | | | | | |
|--------------------|----------------------------------|---|------------------------------------|------------------------------------|-----------------------------|-------------------------------------|---|-------------------------------------|----------------------------------|--------------------------|---------------------------|----------------------------------|
| Base licenses | BIS-BGEN-B4x | | | | | | | | | | | |
| Feature licenses | BIS-FGEN-AMPK4x | BIS-FGEN-MSRV4x | BIS-FGEN-BVMS4x | BIS-FAUE-BPA4x | BIS-FACE-BPA4x | BIS-FACE-PRK4x | BIS-FACE-API4x | BIS-FVIE-BPA4x | | | | |
| | BIS 4.x Alarm Management Package | BIS 4.x Multi-Server Connect per Server | BIS 4.x BVMS Connectivity | AUE 4.x Basic License | ACE 4.x Basic License | ACE 4.x Extended Carpark Management | ACE 4.x Application Programming Interface (API) | VIE 4.x Basic License | | | | |
| Expansion licenses | BIS-XACE-100C4x | BIS-XACE-1KC4x | BIS-XACE-10KC4x | BIS-XACE-50KC4x | BIS-XACE-32DR4x | BIS-XACE-128D4x | BIS-XACE-512D4x | BIS-XACE-25OF4x | BIS-XACE-25ON4x | BIS-XACE-1MAC4x | BIS-XACE-10MC4x | BIS-XACE-1KEY4x |
| | ACE 4.x additional 100 ID Cards | ACE 4.x additional 1,000 ID Cards | ACE 4.x additional 10,000 ID Cards | ACE 4.x additional 50,000 ID Cards | ACE 4.x additional 32 Doors | ACE 4.x additional 128 Doors | ACE 4.x additional 512 Doors | ACE 4.x additional 25 Offline Doors | ACE 4.x 25 wireless online doors | ACE 4.x additional 1 MAC | ACE 4.x additional 10 MAC | ACE 4.x additional 1 Key Cabinet |

* Version dependent

Hardware

Access Modular Controller

- ▶ Intelligent access management controller
- ▶ Carries out independent authorization checks on access points, takes access decisions, controls closing/opening elements and registers movement events – even when offline
- ▶ Specifically designed to work with APE, AMS and BIS-ACE systems
- ▶ Support of RS-485/OSDPv2 secure channel and Wiegand technology
- ▶ Offline capability
- ▶ Administrates up to:
 - 8 readers
 - 200,000 cardholders



Speed of installation

The modular concept makes system planning and stocking easy. The service display allows for quick troubleshooting and system maintenance. Thanks to the fast and reliable Ethernet host interface, cardholder updates are completed within seconds.



Reliability

Thanks to its offline capability and supervised battery extensions, the AMC works continuously. To avoid losing data, the event buffer memory stores up to 2 million events offline.



Future-proof investment

Modular system design ensures that the system can grow and adapt according to your needs and changes in technology.

Readers and Credentials

Bosch offers a wide range of readers and cards, from fully featured advanced solutions to cost-effective starter systems. Most models are available with or without keypad or as biometric versions. Wiegand and RS-485 (OSDPv2 SC) support ensures that our solutions work seamlessly with your technology. Our support team will be happy to assist you in choosing the right system.

Proximity Readers

Proximity readers act as an interface between the proximity card and the access controller. The data is transferred from the card to the reader on 125 kHz frequency band.

Smart Readers

Smart readers act as an interface between the smart card and the access controller. The data is transferred from the card to the reader on 13.56 MHz frequency band. Bosch offers all customers highest security standards with their unique Bosch data elements. All RS-485 smart card readers come equipped with specialized FW to access a secure sector and read the Bosch code on the smart cards.

Readers Security Level

Security level



Security level



Security level



- ▶ Support of OSDP (up to OSDPv2 secure channel)
- ▶ Support of Bosch coded MIFARE credentials
- ▶ Secure communication via AES 128bit encryption
- ▶ Latest SQL data base support

Proximity Readers

| Material description | Card Reader, HIDprox, mullion | Standalone device | Standalone device | Card Reader, EM, mini mullion |
|--|---|---|---|---|
| Commercial type number (CTN) | ARD-MINIPROX | ARD-PROX-PPL | ARD-ENTRYPROX | ARD-AYK12 |
| |  |  |  |  |
| Bosch controller compatibility | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series | Standalone device | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series |
| Software compatibility | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS |
| Interfaces | Wiegand | Wiegand | Wiegand | Wiegand |
| Supported protocol | Wiegand | Wiegand | Wiegand | Wiegand |
| Panel connection | Pigtail | Pigtail | Terminal strip | Pigtail |
| Supported credential technology | HID Prox | HID Prox | HID Prox | EM4102 |
| Bosch code | - | - | - | - |
| Power supply | 5 – 16 VDC | 5 – 16 VDC | 10 – 16 VDC | 5 – 16 VDC |
| Environment class | IP55 | IP55 | IP55 | IP65 |
| Maximum reading distance | 13 cm | 6 cm | 6 cm | 8 cm |
| Keypad | no | no | yes | no |
| Dimensions (H x W x D) | 152 x 43 x 25,4 mm (indoor and outdoor) | 79,6 x 44 x 17 mm (indoor and outdoor) | 133 x 70 x 35 mm (indoor and outdoor) | 80 x 40 x 13 mm (indoor and outdoor) |

Smart Card Readers

(Wiegand) iCLASS

| Name | LECTUS secure 1000 WI | LECTUS secure 4000 WI | LECTUS secure 5000 WI | LECTUS secure 9000 WI |
|------------------------------|------------------------------|--|--|--|
| Material description | Card reader, iCLASS, Wiegand | Handsfree card reader, iCLASS, Wiegand | Card reader with keypad, iCLASS, Wiegand | Handsfree card reader, iCLASS, Wiegand |
| Commercial type number (CTN) | ARD-SER10-WI | ARD-SER40-WI | ARD-SERK40-W1 | ARD-SER90-WI |



- ▶ 13.56 MHz proximity readers for connecting to access controllers with Wiegand interfaces
- ▶ Available with four different form factors, LECTUS secure readers meet nearly all installation requirements

| | | | | |
|--|---|---|---|---|
| Bosch controller compatibility | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series | AMC2-4WCF, APC-AMC2-2WCF, AEC, B/G-Series |
| Software compatibility | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS | APE, BIS-ACE, AEC, AMS |
| Interfaces | Wiegand | Wiegand | Wiegand | Wiegand |
| Supported protocol | Wiegand | Wiegand | Wiegand | Wiegand |
| Panel connection | Pigtail | Terminal strip | Terminal strip | Terminal strip |
| Supported standard | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B |
| Supported credential technology | MIFARE Classic, MIFARE DESFire, iCLASS, iCLASS SE, Seos | MIFARE Classic, MIFARE DESFire, iCLASS, iCLASS SE, Seos | MIFARE Classic, MIFARE DESFire, iCLASS, iCLASS SE, Seos | MIFARE Classic, MIFARE DESFire, iCLASS, iCLASS SE, Seos |
| Bosch code | - | - | - | - |
| Power supply | 5 – 16 VDC | 5 – 16 VDC | 5 – 16 VDC | 5 – 16 VDC |
| Environment class | IP55 (IP65 with gasket) | IP55 (IP65 with gasket) | IP55 (IP65 with gasket) | IP65 |
| Maximum reading distance | 7.6 cm | 11.4 cm | 14 cm | 33.6 cm |
| Keypad | no | no | yes | no |
| Dimensions (H x W x D) | 103 x 48 x 23 mm (indoor) | 122 x 84 x 24 mm (indoor) | 122 x 85 x 28 mm (indoor) | 333 x 333 x 39 mm (indoor and outdoor) |

Smart Card Readers

(Wiegand and RS-485 (OSDP V1)) – MIFARE

| Name | LECTUS duo 3000C | LECTUS duo 3000 CK | LECTUS duo 3000 E | LECTUS duo 3000 EK |
|------------------------------|--------------------------------|--|-------------------------|--|
| Material description | Card reader, MIFARE Classic | Card reader with keypad, MIFARE Classic | Card Reader, MIFARE EV1 | Card reader with keypad, MIFARE EV1 |
| Commercial type number (CTN) | ARD-AYBS6260 | ARD-AYBS6360 | ARD-AYBS6280 | ARD-AYBS6380 |



- ▶ The LECTUS duo 3000 Classic line consists of a keypad and a non keypad version for MIFARE Classic and MIFARE DESFire. They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.
- ▶ Both reader types provide a Wiegand and RS-485/OSDP interface, selectable easily by DIP switch.
- ▶ Three LED indicators and a beeper give clear feedback to the user during operation. The reader's logo is illuminated in the dark.

| | | | | |
|--|---|---|---|---|
| Bosch controller compatibility | AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC | AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC | AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC | AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC |
| Software compatibility | BIS-ACE, APE, AMS, AEC | BIS-ACE, APE, AMS, AEC | BIS-ACE, APE, AMS, AEC | BIS-ACE, APE, AMS, AEC |
| Interfaces | Wiegand, RS-485 | Wiegand, RS-485 | Wiegand, RS-485 | Wiegand, RS-485 |
| Supported protocol | Wiegand, OSDPv1 | Wiegand, OSDPv1 | Wiegand, OSDPv1 | Wiegand, OSDPv1 |
| Panel connection | Terminal strip | Terminal strip | Terminal strip | Terminal strip |
| Supported standard | ISO 1443A | ISO 1443A | ISO 1443A | ISO 1443A |
| Supported credential technology | ISO14443A CSN , MIFARE Classic | ISO14443A CSN , MIFARE Classic | ISO14443A CSN, MIFARE DESFire, MIFARE Classic | ISO14443A CSN, MIFARE DESFire, MIFARE Classic |
| Bosch code | yes | yes | yes | yes |
| Power supply | 8.5 – 16 VDC | 8.5 – 16 VDC | 8.5 – 16 VDC | 8.5 – 16 VDC |
| Environment class | IP65 | IP65 | IP65 | IP65 |
| Maximum reading distance | 3 cm | 3 cm | 3 cm | 3 cm |
| Keypad | no | yes | no | yes |
| Dimensions (H x W x D) | 137 x 44 x 27,5 mm (indoor and outdoor) | 137 x 44 x 27,5 mm (indoor and outdoor) | 137 x 44 x 27,5 mm (indoor and outdoor) | 137 x 44 x 27,5 mm (indoor and outdoor) |

Smart Card Readers

Multitech smart card readers (RS-485 OSDP V2 encrypted) – iCLASS and MIFARE

| Name | LECTUS Secure 1000 RO | LECTUS Secure 2000 RO | LECTUS Secure 4000 RO | LECTUS Secure 5000 RO |
|------------------------------|-----------------------|-----------------------|-----------------------|-------------------------------|
| Material description | Card reader, OSDP | Card reader, OSDP | Card reader, OSDP | Card reader with keypad, OSDP |
| Commercial type number (CTN) | ARD-SER10-RO | ARD-SER15-RO | ARD-SER40-RO | ARD-SERK40-RO |



- ▶ Highest level of security due to OSDPv2 AES 128bit encryption.
- ▶ 13.56 MHz proximity readers for connecting to access controllers with OSDP interfaces
- ▶ They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.
- ▶ Interoperable with a growing range of technology environments and form factors

| | | | | |
|--|---|---|---|---|
| Bosch controller compatibility | AMC2-4WCF | AMC2-4WCF | AMC2-4WCF | AMC2-4WCF |
| Software compatibility | APE, BIS-ACE, AMS | APE, BIS-ACE, AMS | APE, BIS-ACE, AMS | APE, BIS-ACE, AMS |
| Interfaces | RS-485 | RS-485 | RS-485 | RS-485 |
| Supported protocol | OSDPv2 SC | OSDPv2 SC | OSDPv2 SC | OSDPv2 SC |
| Panel connection | Terminal strip | Terminal strip | Terminal strip | Pigtail |
| Supported standard | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B | ISO 1443A, ISO 15693, ISO 14443B |
| Supported credential technology | MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos | MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos | MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos | MIFARE DESFire EV1, MIFARE Classic, iCLASS, iCLASS SE, Seos |
| Bosch code | yes | yes | yes | yes |
| Power supply | 5 – 16 VDC | 5 – 16 VDC | 5 – 16 VDC | 5 – 16 VDC |
| Environment class | IP55 (IP65 with gasket) | IP55 (IP65 with gasket) | IP55 (IP65 with gasket) | IP55 (IP65 with gasket) |
| Maximum reading distance | 7.6 cm | 7.6 cm | 13 cm | 13 cm |
| Keypad | no | no | no | yes |
| Dimensions (H x W x D) | 103 x 48 x 23 mm (indoor and outdoor) | 153 x 48 x 23 mm (indoor and outdoor) | 122 x 85 x 24 mm (indoor and outdoor) | 122 x 85 x 28 mm (indoor and outdoor) |

Biometric Reader and Enrollment Reader

BioEntry W2

| | |
|-------------------------------------|---|
| Name | BioEntry W2 |
| Material description | Fingerprint reader, OSDP, multiCLASS |
| Commercial type number (CTN) | ARD-FPBEW2-H2 |



| | |
|--|---|
| Bosch controller compatibility | AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC |
| Software compatibility | BIS-ACE, AMS, AEC |
| Interfaces | Wiegand, RS-485 |
| Supported protocol | Wiegand, OSDPv2 SC |
| Panel connection | Terminal strip, RJ45 (PoE) |
| Supported standard | ISO 1443A |
| Supported credential technology | EM, HID Prox, MIFARE Classic, MIFARE DESFire EV1, HID-Corporate-1000, iCLASS, iCLASS SE, Seos |
| Bosch code | yes |
| Power supply | 12 VDC or PoE |
| Environment class | Indoor / outdoor product (IP67/ IK09) |
| Maximum reading distance | 13 – 127 mm |
| Keypad | no |
| Dimensions (H x W x D) | 172 x 50 x 43 mm |

Biometry at its highest standard

- ▶ Convenient cardholder registration including the enrollment of fingerprint templates in just one management system (AMS or BIS-ACE)
- ▶ Fingerprint templates can be stored either in secure database or locally on the reader
- ▶ BioEntry W2 provides class-leading performance and security by featuring the latest fingerprint algorithm coupled by a powerful quad-core CPU
- ▶ The device offers flexibility and sustainability by featuring multitechnology support of credentials, including EM, iCLASS and MIFARE DESFire*
- ▶ Packed in a rugged IP67/IK09 housing with sleek metallic finish, BioEntry W2 is a perfect access control solution for tough environment and outdoor installation



Features



Best-In-Class Performance

- ▶ 1.2GHz quad-core CPU



Accuracy & Security

- ▶ High-precision optical sensor to detect a wide variety of fake fingers



High storage capacity

- ▶ Supports up to 400k users
- ▶ Data can be stored either on device or on secure database of AMS / BIS-ACE



Rugged Structure

- ▶ IK09 impact protection
- ▶ IP67 ingress protection
- ▶ Ideal for outdoor installation








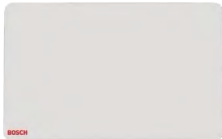


Multi RFID Card Reading

- ▶ LF(125KHz), HF(13.56MHz) dual-band
- ▶ Reads all card types that HID multiCLASS supports (EM/HID Prox/MIFARE Classic/iCLASS/MIFARE DESFire/NFC)
- ▶ Highest security standard by supporting Bosch coded MIFARE credentials

* One card format at a time is supported

Credentials

MIFARE DESFire, MIFARE Classic and iCLASS

| Material description | Card, MIFARE EV1, Bosch coded | Keyfob MIFARE EV1 | MIFARE Classic Card Imprinted Card Number/ Bosch coded | Contactless MIFARE ID Keyfob 1 |
|-------------------------------------|--|--|--|---|
| Commercial type number (CTN) | ACD-EV1-ISO | ACT-EV1TRF-SA1 | ACD-MFC-ISO | ACT-MFCTRF-SA1 |
| |  |  |  |  |
| Description | MIFARE DESFire EV1 ID card with 8 kByte data storage, 2 application areas, one of which can be customized. | MIFARE DESFire EV1 ID keyfob with 8 kByte data storage, 2 application areas, one of which can be customized. | MIFARE Classic ID card with 1 kByte data storage, 2 application areas, one of which can be customized <ul style="list-style-type: none"> ▶ PVC plastic card ▶ Credit card size ▶ Imprinted card number ▶ MIFARE Classic chip | MIFARE Classic ID keyfob with 1 kByte data storage, 2 application areas, one of which can be customized |
| Material description | iCLASS 26 bit Card with printed Bosch Logo | iCLASS 37 bit card with printed Bosch Logo | iCLASS 26bit Keyfob | iCLASS 37bit Keyfob |
| Commercial type number (CTN) | ACD-IC2K26-50 | ACD-IC2K37-50* | ACT-ICL256-2AR* | ACT-IC16K37-10* |
| |  |  |  |  |
| Description | A 13.56 MHz contactless smart card programmed to Wiegand 26-bit format. It has two 1 Kb application areas (256 Byte capacity). | A 13.56 MHz contactless smart card programmed to Wiegand 37-bit format. It has two 1 Kb application areas (256 Byte capacity). | <ul style="list-style-type: none"> ▶ Plastic Tag, PVC ▶ Dimensions: 34 x 31 x 4.4 mm ▶ Fastening Slot ▶ iCLASS chip | A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16k bits (2K bytes) with 16 application areas. |

* Check regional availability with your local sales contact

MIFARE DESFire and MIFARE Classic are all Bosch coded and compatible with the complete Bosch reader portfolio. Further credentials can be found in your local online product catalogue (link: <https://www.boschsecurity.com/xc/en/product-catalog/>).




Readers and credentials

Compatibility matrix

| Bus type | Recommended Bosch Readers | Card format | | | | | | |
|----------|--|---------------------------------|-----------------------------|-------------------------|-----------------|---------|----------|---|
| | | MIFARE DESFire EV1 (Bosch code) | MIFARE Classic (Bosch code) | iCLASS, iCLASS SE, Seos | ISO 14443-A CSN | EM card | HID Prox | |
| | | 13.56 MHz | | | 125kHz | | | |
| RS-485 | LECTUS secure 1000 RO LECTUS secure 2000 RO LECTUS secure 4000 RO LECTUS secure 5000 RO | | • | • | • | • | | |
| | LECTUS duo 3000 C LECTUS duo 3000 CK LECTUS duo 3000 E LECTUS duo 3000 EK | | | • | | • | | |
| | ARD-FPBEW2-H2 | | • | • | • | • | • | • |
| | LECTUS secure 1000 WI LECTUS secure 4000 WI LECTUS secure 5000 W1 LECTUS secure 9000 WI | | | | • | • | | |
| Wiegand | ARD-AYK12 | | | | | | • | |
| | ARD Miniprox ARD Entrypox ARD-PROX-PPL | | | | | | | • |





Access Modular Controller

AMC Controllers

| Material description | Door controller Wiegand, 2 readers | Door controller Wiegand with CF card | Door controller RS-485 with CF card |
|--|---|---|---|
| Commercial type number (CTN) | APC-AMC2-2WCF | APC-AMC2-4WCF | APC-AMC2-4R4CF |
| |  |  |  |
| Input voltage | 10 - 30 VDC | 10 - 30 VDC | 10 - 30 VDC |
| Output voltage | 12 VDC | 12 VDC | 10 - 30 VDC |
| Number of connectable readers | 2 | 4 | 8 |
| Number of Inputs | 4 | 8 | 8 |
| Number of Outputs | 4 | 8 | 8 |
| Display | yes | yes | yes |
| Internal storage (compact flash) | 2GB | 2GB | 2GB |
| Reader Interface | Wiegand | Wiegand | RS-485 |
| Max reader cable length | 110m per reader port | 110m per reader port | 1200m per Bus |
| Reader operating voltage | 12V DC | 12V DC | 10-30V DC |
| Reader monitoring | no | no | yes |
| Number of wires per reader | 7 + 1 | 7 + 1 | 4 + 1 |
| Number of connectable reader extensions | 1 | 1 | - |
| Number of connectable I/O extensions | 3 | 3 | 3 |
| Reader protocol support | Wiegand | Wiegand | OSDP, LBUS, MICOS, BG900 |
| Standards | CE | CE, UL | CE, UL, VDS |





Access Modular Controller

AMC I/O Extension Boards



| Material description | Door controller Wiegand extension | Extension board with 8-input 8-output | Extension board with 16-input 16-output | Extension board with 16-input |
|----------------------------------|---|---|---|---|
| Commercial type number (CTN) | API-AMC2-4WE | API-AMC2-8IOE | API-AMC2-16IOE | API-AMC2-16IE |
| |  |  |  |  |
| Input voltage | 10 - 30 VDC | 10 - 30 VDC | 10 - 30 VDC | 10 - 30 VDC |
| Output voltage to reader | 12 VDC | n/a | n/a | n/a |
| Number of connectable readers | 4 | - | - | - |
| Number of Inputs | 8 | 8 | 16 | 16 |
| Number of Outputs | 8 | 8 | 16 | |
| Display | no | no | no | no |
| Internal storage (compact flash) | no | no | no | no |

AMC Accessories

Enclosures




| Material description | Enclosure with 1 DIN rail | Enclosure VDS certified | Enclosure with 2 DIN rails | Enclosure with power supply & DIN rail |
|-------------------------------------|--|---|--|--|
| Commercial type number (CTN) | AEC-AMC2-UL1 | AEC-AMC2-VDS (EMEA)* | AEC-AMC2-UL2 | AEC-AMC2-ENC3/ENC3Z (China) |
| |  |  |  |  |
| Information | <ul style="list-style-type: none"> ▶ Steel enclosure ▶ 1 DIN rail system for easy mounting of AMC2 or AMC2 extension board, power supply and battery | <ul style="list-style-type: none"> ▶ Steel enclosure with preassembled cabling ▶ 1 DIN-rail click system for easy mounting and replacement ▶ Compliant with Vds 2119 | <ul style="list-style-type: none"> ▶ Steel enclosure ▶ 2 DIN rail system for easy mounting of AMC2 or MAC2 extension board, power supply and battery | <ul style="list-style-type: none"> ▶ Steel enclosure with preassembled cabling ▶ This enclosure can be used for securely mounting and housing AEC and AMC2 and a power supply. |

Mounting Plate, Power supply

| Material description | Mounting plate for two/four DIN rails | Power Supply Unit |
|-------------------------------------|---|---|
| Commercial type number (CTN) | AEC-PANEL19-UPS/AEC-PANEL19-4DR | APS-PSU-60 |
| |  |  |
| Information | <ul style="list-style-type: none"> ▶ 4 rack units/ 88 horizontal pitches ▶ Up to four rails for AMC devices ▶ Battery bracket ▶ Screw socket for PBC-60 ▶ Cable kits to connect the power supply | <ul style="list-style-type: none"> ▶ Power supply unit with integrated battery charging device ▶ Support of 12 V/7 Ah, 12 V/14 Ah and 24 V/7 Ah batteries |

Access Hardware Extensions

Request-to-Exit

| Material description | DS160 Series High Performance | Door Release Button | Door Release Button |
|-------------------------------------|---|--|--|
| Commercial type number (CTN) | DS160(white)/DS161(black) | 4710760047* | 4710760048* |
| |  |  |  |
| Type | Request-to-exit Detectors | RTE button with key symbol surface-mount | RTE button with key symbol flush-mount |
| Information | <ul style="list-style-type: none"> ▶ Door monitor with sounder alert ▶ Up to 64 second adjustable latch time ▶ Selectable relay trigger mode ▶ Selectable fail safe/fail secure modes | <ul style="list-style-type: none"> ▶ Zero-potential sensor contact for signaling whether the door is open or closed ▶ Suppressor diode to counteract voltage spikes during the switching process | <ul style="list-style-type: none"> ▶ Zero-potential feedback contact for signaling whether the door is open or closed ▶ Recovery diode for suppressing interfering pulses during the switching process |

* Check regional availability with your local sales contact

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Level: EXPERT

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Level: MASTER

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