



**BOSCH**

Invented for life

# Access Control Systems

[www.boschsecurity.com](http://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.



Financial Institutions



Healthcare



Manufacturing



Hotels



Office buildings



Energy and utilities



IT Centers



Education



Transportation

## 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 industrial sites, airports or governmental buildings. Our software solution for medium to large sized projects such as offices, retail stores or healthcare facilities is the Access Management System. All software solutions 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



Our Access Management System is a perfect solution for office buildings, hospitals and medical centers, schools, hotels and warehouses.

The Access Engine of the Building Integration System is ideal for banks, factories, public transportation applications, power plants, data centers, and stadiums.

## 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 (10.1 or higher) and other video management systems
- ▶ 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
- ▶ Browser-based Visitor Management offering all the benefits for enhancing the visiting process



### 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 can 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 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
  - 400,000 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

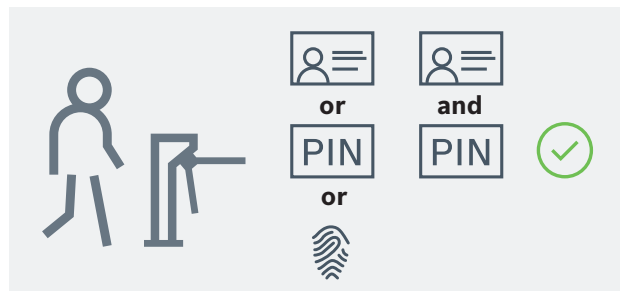
### Single authentication (identification)

- ▶ 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

- ✔
- ▶ **Convenience**
- ▶ **Speed**
- ▶ **High level of security**

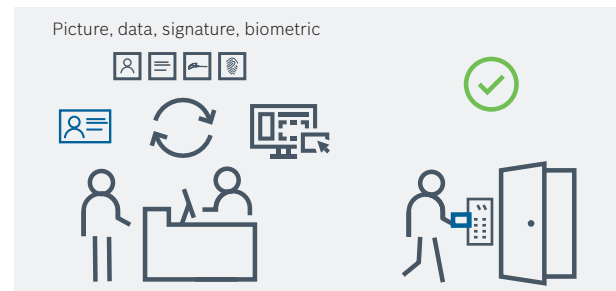


## Administrative functionalities

### 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

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



### Visitor management

- ▶ Web browser based visitor management system
- ▶ Comprehensive and user-friendly application for receptionists
- ▶ Host view for employees to pre-register their visitors
- ▶ Self-registration option for visitors
- ▶ Scanning of ID / passport for fast upload of personal information
- ▶ Upload and signing of documents
- ▶ Flexible configuration options to adjust the system to individual requirements and legal needs

- ✔
- ▶ **Efficiency**
- ▶ **Improved visitor experience**



\* All functionalities are available in all software options (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

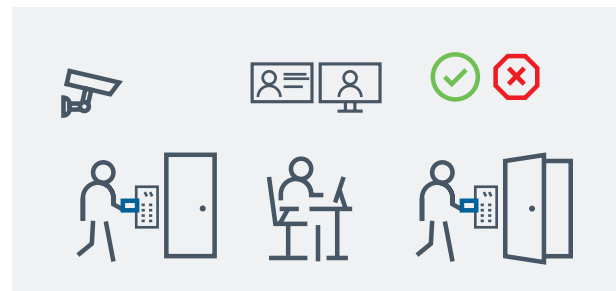
- ▶ **High level of security**
- ▶ **Prevention of misuse of cards**



### 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

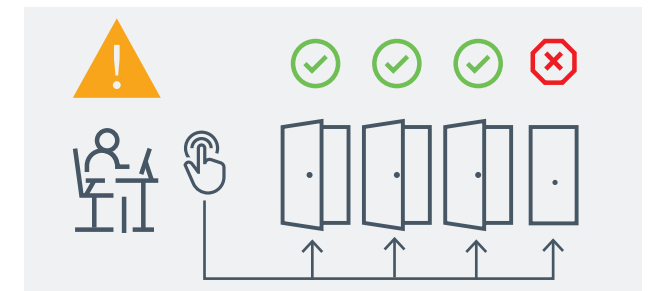
- ▶ **High level of security**
- ▶ **Prevention of misuse of credentials**



### 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

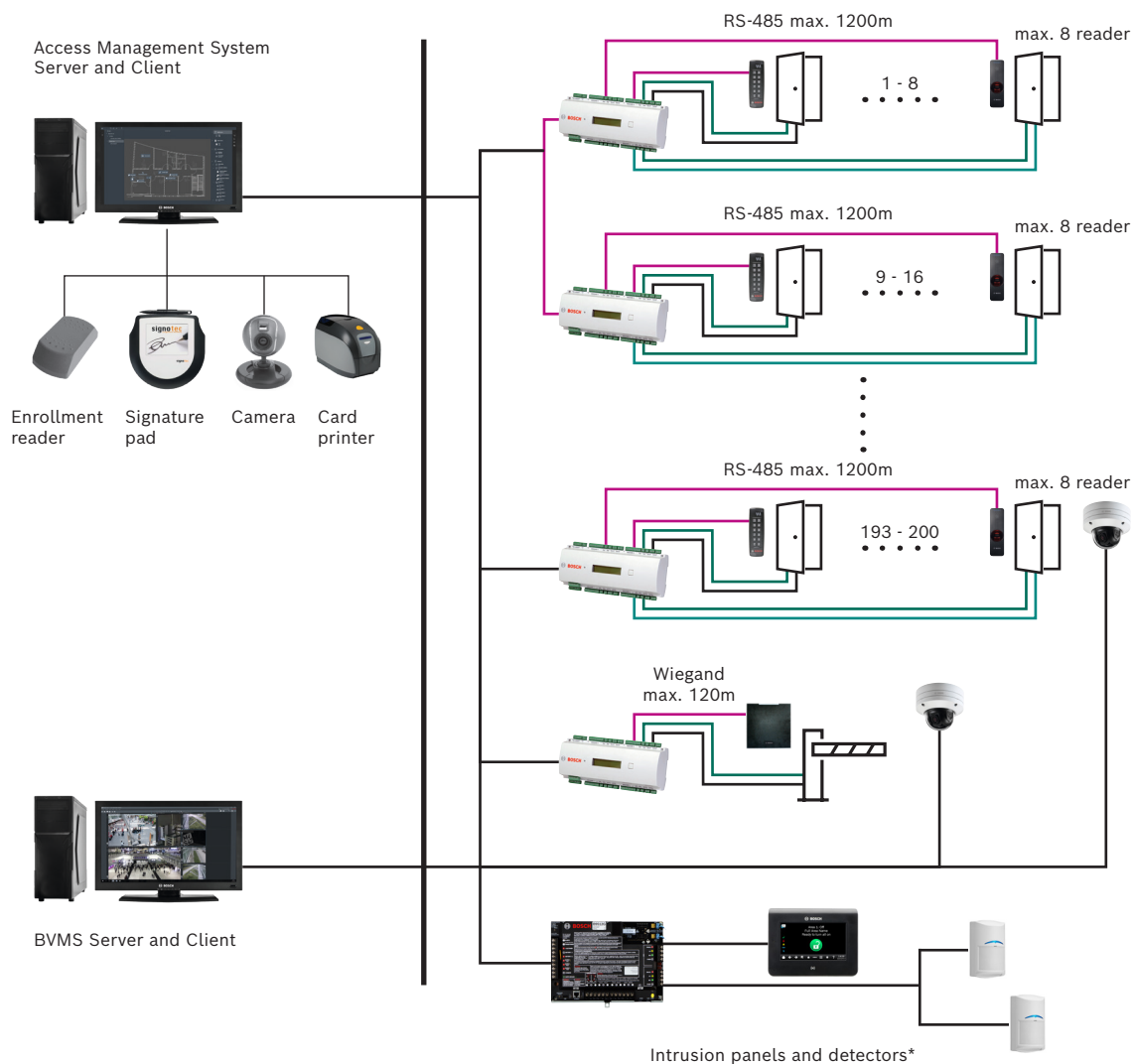
- ▶ **High level of safety on site**
- ▶ **Fast reaction in critical situations**





# System design example

## Access Management System



\* Not applicable in European countries

### System description / application

System size		
<ul style="list-style-type: none"> <li>▶ 150 doors</li> <li>▶ 1,200 cardholders</li> <li>▶ Three operators</li> </ul>		
AMS features	AMC features	Reader features
<ul style="list-style-type: none"> <li>▶ Max. 10,000 doors</li> <li>▶ Max. 200,000 cardholders</li> <li>▶ 5 cards per person</li> <li>▶ 1,024 authorizations per MAC</li> <li>▶ Graphical location map</li> <li>▶ Video integration for video verification via BVMS</li> <li>▶ Visitor Management</li> </ul>	<ul style="list-style-type: none"> <li>▶ 2 RS-485 buses</li> <li>▶ 8 inputs</li> <li>▶ 8 relays</li> <li>▶ TCP/IP connection</li> </ul>	<ul style="list-style-type: none"> <li>▶ Support of OSDPv2 secure channel</li> <li>▶ Outdoor resistant (up to IP67)</li> <li>▶ Multitechnology support (125kHz and 13.56MHz)</li> <li>▶ Wiegand and RS-485 support</li> <li>▶ Keypad or fingerprint for verification</li> </ul>
Door element	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

## AMS licenses

	AMS-BASE-LITE30	AMS-BASE-PLUS30	AMS-BASE-PRO30
Base licenses	Lite license	Plus license	Pro license

	AMS-XDIV-1V30	AMS-XCLI-1V30	AMS-XCLI-5V30	AMS-XCRD-100V30	AMS-XCRD-1KV30	AMS-XCRD-10KV30	AMS-XCRD-50KV30	AMS-XDRS-32V30	AMS-XDRS-128V30	AMS-XDRS-512V30	AMS-XOND-25V30	AMS-XMAC-1V30	AMS-XMAC-5V30	AMS-FVIS-WEBV30	AMS-XPAN-10V30	AMS-XPAN-50V30
Expansion licenses	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	License for Visitor Management	License for 10 intrusion panels	License for 50 intrusion panels

## BIS-ACE licenses

	BIS 4.9 Basic License
Base licenses	BIS-BGEN-B49

	BIS-FGEN-AMPK49	BIS-FGEN-MSRV49	BIS-FGEN-BVMS49	BIS-FAUE-BPA49	BIS-FACE-BPA49	BIS-FACE-PRK49	BIS-FACE-API49	BIS-FACE-VISWEB49	BIS-FVIE-BPA49
Feature licenses	BIS 4.9 Alarm Management Package	BIS 4.9 Multi-Server Connect per Server	BIS 4.9 BVMS Connectivity	AUE 4.9 Basic License	ACE 4.9 Basic License	ACE 4.9 Extended Carpark Management	ACE 4.9 Application Programming Interface (API)	ACE 4.9 Visitor Management	VIE 4.9 Basic License

	BIS-XACE-100C49	BIS-XACE-1KC49	BIS-XACE-10KC49	BIS-XACE-50KC49	BIS-XACE-32DR49	BIS-XACE-128D49	BIS-XACE-512D49	BIS-XACE-25OF49	BIS-XACE-25ON49	BIS-XACE-1MAC49	BIS-XACE-10MC49	BIS-XACE-1KEY49
Expansion licenses	ACE 4.9 additional 100 ID Cards	ACE 4.9 additional 1,000 ID Cards	ACE 4.9 additional 10,000 ID Cards	ACE 4.9 additional 50,000 ID Cards	ACE 4.9 additional 32 Doors	ACE 4.9 additional 128 Doors	ACE 4.9 additional 512 Doors	ACE 4.9 additional 25 Offline Doors	ACE 4.9 25 wireless online doors	ACE 4.9 additional 1 MAC	ACE 4.9 additional 10 MAC	ACE 4.9 additional 1 Key Cabinet

# 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 AMS and BIS-ACE systems
- ▶ Support of RS-485/OSDPv2 secure channel and Wiegand technology
- ▶ Offline capability
- ▶ Administrates up to:
  - 8 readers
  - 400,000 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.

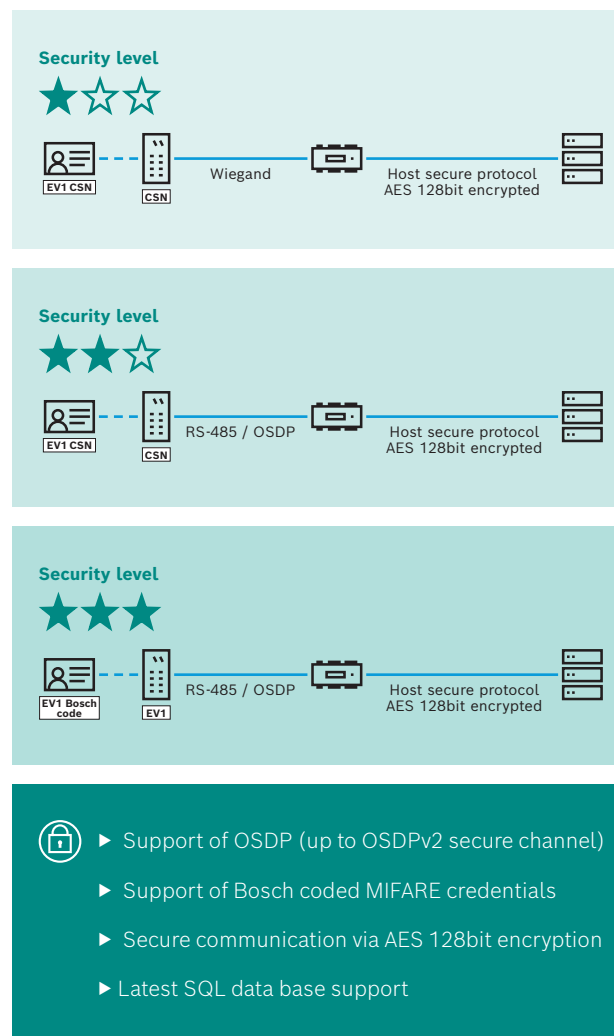
### Proximity Readers

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



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

# 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

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

# 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.

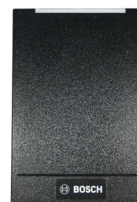
<b>Bosch controller compatibility</b>	APC- AMC2-4WCF, APC- AMC2-2WCF, APC- AMC2-4R4CF, AEC	APC- AMC2-4WCF, APC- AMC2-2WCF, APC- AMC2-4R4CF, AEC	APC- AMC2-4WCF, APC- AMC2-2WCF, APC- AMC2-4R4CF, AEC	APC- AMC2-4WCF, APC- AMC2-2WCF, APC- AMC2-4R4CF, AEC
<b>Software compatibility</b>	BIS-ACE, AMS, AEC	BIS-ACE,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



# 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

<b>Bosch controller compatibility</b>	AMC2-4WCF	AMC2-4WCF	AMC2-4WCF	AMC2-4WCF
<b>Software compatibility</b>	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS
<b>Interfaces</b>	RS-485	RS-485	RS-485	RS-485
<b>Supported protocol</b>	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC
<b>Panel connection</b>	Terminal strip	Terminal strip	Terminal strip	Pigtail
<b>Mounting</b>	Surface mount	Surface mount	Surface mount	Surface mount
<b>Supported standard</b>	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B	ISO 1443A, ISO 15693, ISO 14443B
<b>Supported credential technology</b>	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
<b>Bosch code</b>	yes	yes	yes	yes
<b>Power supply</b>	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC	5 – 16 VDC
<b>Environment class</b>	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)	IP55 (IP65 with gasket)
<b>Maximum reading distance</b>	7.6 cm	7.6 cm	13 cm	13 cm
<b>Keypad</b>	no	no	no	yes
<b>Dimensions (H x W x D)</b>	103 x 48 x 23 mm	153 x 48 x 23 mm	122 x 85 x 24 mm	122 x 85 x 28 mm

# Smart Card Readers

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

Name	LECTUS select	LECTUS select	LECTUS select	LECTUS select
Material description	Card reader with keypad, OSDP (black)	Card reader, OSDP (black)	Card reader with keypad, OSDP (white)	Card reader, OSDP (white)
Commercial type number (CTN)	ARD-SELECT-BOK*	ARD-SELECT-BO*	ARD-SELECT-WOK*	ARD-SELECT-WO*



- ▶ Compact design, front cover, rear panel and surface-mounted housing made of plastic
- ▶ They come equipped with the Bosch coded MIFARE data sector and support reading the CSN of ISO14443A cards as well.
- ▶ Easy installation
- ▶ Flush-mount: on standard flush-mounting box Ø 60 mm
- ▶ Surface-mount: directly on the wall - cable entry options from above, below and behind the device
- ▶ Sabotage monitoring
- ▶ When using smart cards that carry multiple applets (e.g. MIFARE & Legic), please check with your integrator for the best performance of the installation

<b>Bosch controller compatibility</b>	AMC2-4R4CF	AMC2-4R4CF	AMC2-4R4CF	AMC2-4R4CF
<b>Software compatibility</b>	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS	BIS-ACE, AMS
<b>Interfaces</b>	RS-485	RS-485	RS-485	RS-485
<b>Supported protocol</b>	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC	OSDPv2 SC
<b>Panel connection</b>	Terminal strip	Terminal strip	Terminal strip	Terminal strip
<b>Mounting</b>	Surface mount	Surface mount	Surface mount	Surface mount
<b>Supported standard</b>	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B	ISO 14443A, ISO 15693, ISO 14443B
<b>Supported credential technology</b>	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant	MIFARE DESFire EV1 & EV2, LEGIC advant
<b>Bosch code</b>	yes	yes	yes	yes
<b>Power supply</b>	8 – 30 VDC	8 – 30 VDC	8 – 30 VDC	8 – 30 VDC
<b>Environment class</b>	IP54	IP54	IP54	IP54
<b>Maximum reading distance</b>	7.6 cm	7.6 cm	7.6 cm	7.6 cm
<b>Keypad</b>	yes	no	yes	no
<b>Dimensions (H x W x D)</b>	88 x 99 x 27 mm	88 x 99 x 27 mm	88 x 99 x 27 mm	88 x 99 x 27 mm

\* Check regional availability with your local sales contact

# Biometric Reader and Enrollment Reader

## BioEntry W2 and Lectus enroll 5000

<b>Name</b>	BioEntry W2	Lectus enroll 5000
<b>Material description</b>	<b>Fingerprint-card reader, OSDP, multiCLASS</b>	<b>USB enrollment reader, MIFARE EV1</b>
<b>Commercial type number (CTN)</b>	ARD-FPBEW2-H2	ARD-EDMCV002-USB



<b>Bosch controller compatibility</b>	AMC2-4WCF, APC-AMC2-2WCF, AMC2-4R4CF, AEC	n.a.
<b>Software compatibility</b>	BIS-ACE, AMS, AEC	BIS-ACE, APE, AMS
<b>Interfaces</b>	Wiegand, RS-485	n.a.
<b>Supported protocol</b>	Wiegand, OSDPv2 SC	n.a.
<b>Panel connection</b>	Terminal strip, RJ45 (PoE)	USB
<b>Mounting</b>	Surface mount	Surface mount
<b>Supported standard</b>	ISO 14443A	ISO 14443A
<b>Supported credential technology</b>	EM, HID Prox, MIFARE Classic, MIFARE DESFire EV1, HID-Corporate-1000, iCLASS, iCLASS SE, Seos	MIFARE classic, DESFire EV1 (Bosch data record)
<b>Bosch code</b>	yes	yes
<b>Power supply</b>	12 VDC or PoE	Powered by USB
<b>Environment class</b>	IP67	IP40 (indoor)
<b>Maximum reading distance</b>	13 – 127 mm	n.a.
<b>Keypad</b>	no	no
<b>Dimensions (H x W x D)</b>	172 x 50 x 43 mm	112 x 54 x 27 mm



# Biometric Reader

## IDEMIA SIGMA Lite

Name	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite	IDEMIA SIGMA Lite
Material description	<b>Fingerprint reader, LED indicator</b>	<b>Fingerprint-card reader, iClass, LED indicator</b>	<b>Fingerprint-card reader, Prox, LED indicator</b>	<b>Fingerprint-card reader, Multi, LED indicator</b>
Commercial type number (CTN)	293678615	293678628	293673665	293678636



Bosch controller compatibility	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF
Software compatibility	BIS-ACE	BIS-ACE	BIS-ACE	BIS-ACE
Interfaces	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485
Supported protocol	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
Panel connection	Pigtail	Pigtail	Pigtail	Pigtail
Mounting	Surface mount	Surface mount	Surface mount	Surface mount
Supported standard	-	ISO 15693	-	ISO 14443A
Supported credential technology	-	HID iClass, iClass SE, Seos	HID Prox	MIFARE Classic, MIFARE DESFire
Bosch code	-	-	-	-
Power supply	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE
Environment class	IP65	IP65	IP65	IP65
Keypad	no	no	no	no
Dimensions (H x W x D)	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm

# Biometric Reader

## IDEMIA SIGMA Lite+

<b>Name</b>	IDEMIA SIGMA Lite+	IDEMIA SIGMA Lite+	IDEMIA SIGMA Lite+
<b>Material description</b>	<b>Fingerprint-card reader, iClass, touchscreen</b>	<b>Fingerprint-card reader, Prox, touchscreen</b>	<b>Fingerprint-card reader, Multi, touchscreen</b>
<b>Commercial type number (CTN)</b>	293673644	293678678	293678660

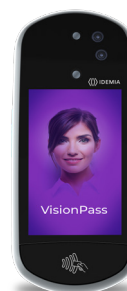


<b>Bosch controller compatibility</b>	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF
<b>Software compatibility</b>	BIS-ACE	BIS-ACE	BIS-ACE
<b>Interfaces</b>	Wiegand, RS-485	Wiegand, RS-485	Wiegand, RS-485
<b>Supported protocol</b>	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
<b>Panel connection</b>	Pigtail	Pigtail	Pigtail
<b>Mounting</b>	Surface mount	Surface mount	Surface mount
<b>Supported standard</b>	ISO 15693	-	ISO 14443A
<b>Supported credential technology</b>	HID iClass, iClass SE, Seos	HID Prox	MIFARE Classic, MIFARE DESFire
<b>Bosch code</b>	-	-	-
<b>Power supply</b>	12 - 24 VDC or PoE	12 - 24 VDC or PoE	12 - 24 VDC or PoE
<b>Environment class</b>	IP65	IP65	IP65
<b>Keypad</b>	yes	yes	yes
<b>Dimensions (H x W x D)</b>	156 x 68 x 62 mm	156 x 68 x 62 mm	156 x 68 x 62 mm

# Biometric Reader

## IDEMIA MorphoWave Compact and IDEMIA VisionPass






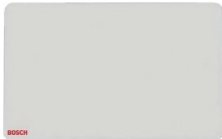


<b>Name</b>	IDEMIA MorphoWave Compact	IDEMIA VisionPass
<b>Material description</b>	<b>Contactless 3D fingerprint-card reader, MDPI</b>	<b>Facial recognition card reader, MDPI</b>
<b>Commercial type number (CTN)</b>	293722319	293744604



<b>Bosch controller compatibility</b>	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF	AMC2-4WCF, APC-AMC2-2WCF, AMC2- 4R4CF
<b>Software compatibility</b>	BIS-ACE	BIS-ACE
<b>Interfaces</b>	Wiegand, RS-485	Wiegand, RS-485
<b>Supported protocol</b>	Wiegand, OSDPv2 SC	Wiegand, OSDPv2 SC
<b>Panel connection</b>	Pigtail	Pigtail
<b>Mounting</b>	Surface mount or pedestal mount (optional)	Surface mount
<b>Supported standard</b>	ISO 14443A (MiFare) and ISO 15693 (iClass and SEOS)	ISO 14443A (MiFare) and ISO 15693 (iClass and SEOS)
<b>Supported credential technology</b>	HID iClass, iClass SE, Seos HID Prox MIFARE DESFire	HID iClass, iClass SE, Seos HID Prox MIFARE DESFire
<b>Bosch code</b>	-	-
<b>Power supply</b>	12 - 24 VDC or PoE+	12 - 24 VDC
<b>Environment class</b>	IP65	IP65
<b>Keypad</b>	yes	yes
<b>Dimensions (H x W x D)</b>	250 x 152 x 216 mm	156 x 68 x 62 mm

# 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
<b>Commercial type number (CTN)</b>	ACD-EV1-ISO	ACT-EV1TRF-SA1	ACD-MFC-ISO	ACT-MFCTRF-SA1
				
<b>Description</b>	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"> <li>▶ PVC plastic card</li> <li>▶ Credit card size</li> <li>▶ Imprinted card number</li> <li>▶ MIFARE Classic chip or</li> </ul>	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
<b>Commercial type number (CTN)</b>	ACD-IC2K26-50	ACD-IC2K37-50*	ACT-ICL256-2AR*	ACT-IC16K37-10*
				
<b>Description</b>	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"> <li>▶ Plastic Tag, PVC</li> <li>▶ Dimensions: 34 x 31 x 4.4 mm</li> <li>▶ Fastening Slot</li> <li>▶ iCLASS chip</li> </ul>	A contactless adhesive tag with smart card technology programmed to Wiegand 37-bit format. It operates at 13.56 MHz. It is 16K (2K Byte) 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	LEGIC advant	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 select		●	●*		●*	●		
Wiegand	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			●	●		●		
	ARD-AYK12							●	
	ARD Miniprox ARD Entrypox ARD-PROX-PPL								●

\* Special configuration is needed





# Access Modular Controller

## AMC Controllers

Material description	Door controller Wiegand, 2 readers	Door controller Wiegand, 4-8 readers	Door controller RS-485, 8 readers
<b>Commercial type number (CTN)</b>	APC-AMC2-2WCF	APC-AMC2-4WCF	APC-AMC2-4R4CF
			
<b>Input voltage</b>	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
<b>Output voltage</b>	12 VDC	12 VDC	10 - 30 VDC
<b>Number of connectable readers</b>	2	4	8
<b>Number of Inputs</b>	4	8	8
<b>Number of Outputs</b>	4	8	8
<b>Display</b>	yes	yes	yes
<b>Amount of cardholders</b>	400.000	400.000	400.000
<b>Reader Interface</b>	Wiegand	Wiegand	RS-485
<b>Max reader cable length</b>	110m per reader port	110m per reader port	1200m per Bus
<b>Reader operating voltage</b>	12V DC	12V DC	10-30V DC
<b>Reader monitoring</b>	no	no	yes
<b>Number of wires per reader</b>	6 + shield	6 + shield	4 + shield
<b>Number of connectable reader extensions</b>	1	1	-
<b>Number of connectable I/O extensions</b>	3	3	3
<b>Mounting</b>	Standard DIN rail	Standard DIN rail	Standard DIN rail
<b>Reader protocol support</b>	Wiegand	Wiegand	OSDP, LBUS, MICOS, BG900
<b>Standards</b>	CE, UL	CE, UL	CE, UL, VDS
<b>Dimensions (H x W x D)</b>	90 x 232 x 63 mm	90 x 232 x 63 mm	90 x 232 x 63 mm




# Access Modular Controller

## AMC I/O Extension Boards



Material description	Wiegand extension board for 4 readers	I/O extension board with 8-input & 8-output	I/O extension board with 16-input & 16-output	I extension board with 16-input
<b>Commercial type number (CTN)</b>	API-AMC2-4WE	API-AMC2-8IOE	API-AMC2-16IOE	API-AMC2-16IE
				
<b>Input voltage</b>	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
<b>Output voltage to reader</b>	12 VDC	n/a	n/a	n/a
<b>Number of connectable readers</b>	4	–	–	–
<b>Number of Inputs</b>	8	8	16	16
<b>Number of Outputs</b>	8	8	16	
<b>Mounting</b>	Standard DIN rail	Standard DIN rail	Standard DIN rail	Standard DIN rail
<b>Display</b>	no	no	no	no
<b>Dimensions (H x W x D)</b>	90 x 232 x 46 mm	90 x 232 x 46 mm	90 x 232 x 46 mm	90 x 232 x 46 mm

# Access Modular Controller Accessories

## Enclosures




Material description	Enclosure with 1 DIN rail	Enclosure with 2 DIN rails	Enclosure with power supply & DIN rail
<b>Commercial type number (CTN)</b>	AEC-AMC2-UL01	AEC-AMC2-UL02	AEC-AMC2-ENC3/ENC3Z (China)
			
<b>Information</b>	<ul style="list-style-type: none"> <li>▶ Steel enclosure</li> <li>▶ 1 DIN rail system for easy mounting of AMC2 or AMC2 extension board, power supply and battery</li> </ul>	<ul style="list-style-type: none"> <li>▶ Steel enclosure</li> <li>▶ 2 DIN rail system for easy mounting of AMC2 or MAC2 extension board, power supply and battery</li> </ul>	<ul style="list-style-type: none"> <li>▶ Steel enclosure with preassembled cabling</li> <li>▶ This enclosure can be used for securely mounting and housing AEC and AMC2 and a power supply.</li> </ul>

## Mounting Plate, Power supply

Material description	Mounting plate for 2 or 4 DIN rails	Power Supply Unit
<b>Commercial type number (CTN)</b>	AEC-PANEL19-UPS/AEC-PANEL19-4DR	APS-PSU-60
		
<b>Information</b>	<ul style="list-style-type: none"> <li>▶ 4 rack units/ 88 horizontal pitches</li> <li>▶ Up to four rails for AMC devices</li> <li>▶ Battery bracket</li> <li>▶ Screw socket for PBC-60</li> <li>▶ Cable kits to connect the power supply</li> </ul>	<ul style="list-style-type: none"> <li>▶ Power supply unit with integrated battery charging device</li> <li>▶ Support of 12 V/7 Ah, 12 V/14 Ah and 24 V/7 Ah batteries</li> </ul>

# Access Hardware Extensions

## Request-to-Exit

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

\* Check regional availability with your local sales contact



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