



## AMC2 4W - Access Controllers

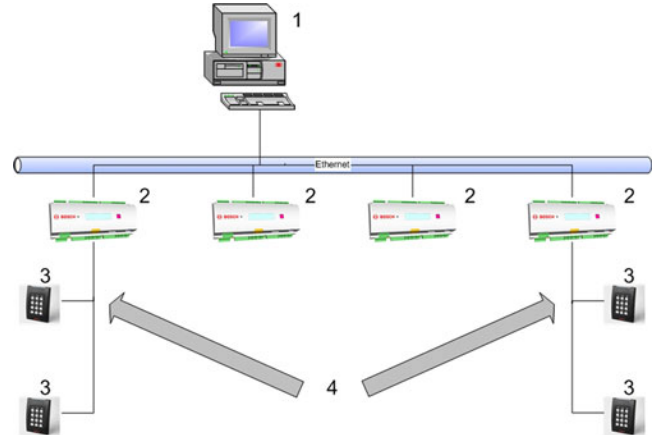


- ▶ Intelligent access manager for one to four entrances
- ▶ Four Wiegand interfaces include the reader power supply
- ▶ Standard 64 MB compact flash - extendable to 1 GB
- ▶ LCD display for displaying information
- ▶ Self-controlling send and receive switching
- ▶ Individual electronic verification of plugs and outputs
- ▶ Input for an externally connected tamper contact

The AMC2 4W (Access Modular Controller) is used as an access controller in the ACE (ACCESS ENGINE) access control system from version 2.0 onward. The device controls a group of one to four access points. These access points, also known as entrances, mainly consist of doors, gates, barriers, turn stiles, revolving doors, mantraps, ID card readers, door opening elements and sensors. The AMC2 4W can control up to four ID card readers and is designed for fully processing the access logic at the assigned entrances.

Status checks can be carried out using the eight analog inputs. The eight relay outputs are used to activate the door opening elements and/or generate the security activation and signaling. The AMC2 4W stores all necessary information in a battery-buffered memory and a compact flash storage element so that, even when the unit is offline, it is able to carry out independent authorization checks on access points, take access decisions, control closing/opening elements and register movement events.

### System Overview



- 1 = Host computer  
 2 = AMC2 4W  
 3 = Card reader  
 4 = Communication and power supply

As shown in the diagram, the AMC2 4W is integrated between the host system (e.g. Access Engine) and the peripheral devices.

They are connected to the host system via RS485, RS232 (e.g. modem operation) or Ethernet, depending on the size of the system. The relevant host interface is selected during installation. All three interfaces are available on the device by default. With RS485 operation, a maximum of eight AMC2 4Ws can be connected to one party line.

There are up to four slots on the peripheral bus for readers, including the slot for the power supply.

The following ID card readers can be connected:

- ID card readers with Wiegand interface
- ARD-R10; ARD-R30; ARD-R40; ARD-RK40-AMC01; ARD-ENTRYPROX; ARD-PROXPOINTPLUS; ARD-MINIPROX; ARD-PROX80
- 26-bit/37-bit Wiegand data format, and with all ARD-Rxx MIFARE CSN readers
- HID 5375AGN00
- HID 6181 AKT000000
- Further Wiegand readers that are compatible with the readers mentioned above

### Functions

- Storing downloaded data as listed below:
  - Master data
  - Authorizations
  - Access models
  - Display texts
  - Reader configurations
- Interpretation of transaction data from reader
  - Authorization check
  - Host request
  - PIN code
- Control/monitoring
  - Denial or door release
  - Switching alarm
  - Door statuses
  - Reader operation statuses
  - Internal alarm statuses
- Messages to Access Engine
  - Host requests
  - Transaction data for storing
  - Error and malfunction messages
  - Alarm messages
- Power supply for
  - Readers
  - Door openers
  - Contact current feeds

### Installation/Configuration Notes

#### Power supply

An external power supply (10 to 30 V DC) for the AMC2 4W is connected to the first (positive) and third pin (negative).

The diodes are enclosed with the AMC2 4W.

When using an uninterruptible power supply (UPS), the relevant UPS output relay is connected to the pins

- 4 and 7 for alternating current
- 5 and 7 for the battery
- 6 and 7 for direct current

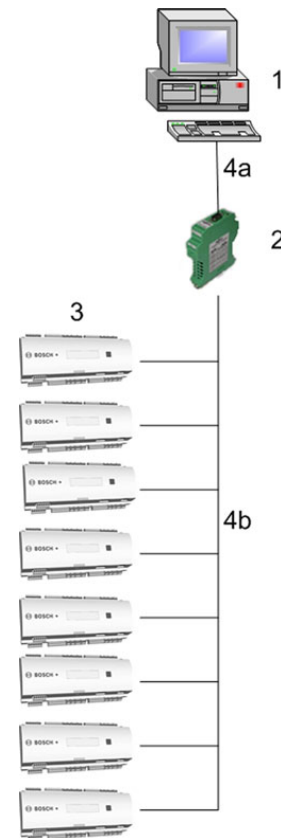
Otherwise, these pins will short-circuit.

Host connections

RS232 host interfaces

The Access Engine application administers up to 32 serial direct connections (ports), theoretically allowing 32 AMC2 4Ws to be directly connected in series.

Note Since PCs only have a maximum of two COM interfaces by default, the following connection variants are preferable for configurations with more than two AMC2 4Ws:



1 = Host computer

2 = RS232/485 AMC-MUX converter

3 = AMC2 4W

4a = RS232 connection

4b = RS485 connection: Up to eight AMC2 4Ws can be connected to one RS485 interface for each AMC-MUX.

The AMC-MUX interface converter should be used if more than two AMC2 4Ws are connected.

The interface converter generates an RS485 bus (2 or 4-wire) from a COM port and thus allows up to eight AMC2 4Ws to be connected with the RS485-typical distances (1200 m/3900 ft.).

Alternatively, the RS485 host interface (2 or 4-wire) can be activated in the AMC2 4W via a jumper. There are two sets of connection points; one for the incoming and one for the outgoing bus system.

**Quantity restrictions**

- Please follow the Access Engine installation and configuration instructions regarding the maximum number of access controllers on one access control system and the number of cardholders.
- Max. 4 access points/entrances
- Max. 4 ID card readers
- Max. 3 peripheral devices via internal RS485 bus
- Max. 200,000 cardholders with AMC-CF-1024 (MB) additional memory

**ID card reader connections**

**Wiegand interfaces**

The AMC2 4W has four connections for connecting up to four ID card readers.

ID card reader and door control element interfaces are split into four channels, each with four connection plugs.

The following definitions apply to the Wiegand interface:

- 10-wire interface (incl. shield)
- Maximum cable length of 158 m (500 ft.) to ID card reader
- 26-bit Wiegand format
- 37-bit Wiegand format

Default configuration of the Wiegand interface on the ID card reader:

1	12V+ reader power supply
2	12V- reader power supply
3	Data line 0
4	Data line 1
5	Shield
6	Green LED
7	Red LED
8	Acoustic signal
9	Delay
10	Show card

**Reader and door models**

The AMC2 4W controls the connected reader via predefined door models.

Door models govern in accordance with the relevant security requirements

- Number and usage of the readers connected to the AMC2 4W, e.g. input and output readers, input readers and buttons etc.

- Number and application type of the AMC inputs, e.g. door status, output button, revolving door position, GMA etc.
- Number and usage of AMC outputs, e.g. door opener, mantrap contact, signal light switching etc.

The maximum number of entrances to be managed by one AMC2 4W is ultimately defined by the door models used and their requirements regarding readers and inputs/ outputs.

**Note** Therefore, when planning an access system, you must first assign the relevant door models to all entrances that are to be controlled. Only then can you configure the AMC reader.

**Voltage equalization - grounding**

- Different voltages can be equalized using jumpers with protective ground.
- A line (shield, equipotential bonding line) with protective ground can only be connected in one position.
- For further instructions, please see the operating manual!

**Contacts**

**Inputs**

The eight analog inputs can be used as digital or analog contacts. For analog use, resistance values can be specified that make it possible to carry out a further check for cable breaks and short-circuits.

**Relay outputs**

The relay outputs offer the following functions:

- The outputs can operate with potential free contacts for external power supply (dry mode).
- The outputs can operate using the internal 12 VDC power supply (wet mode).
- Only ohm resistive loads can be connected to the relay.
- Inductive loads must be bypassed via recovery diodes. These diodes (BAX12A) are enclosed.

**General instructions**

- AMC2 and related equipment should be mounted in a "secured area".
- Detailed connection conditions are specified in the operating manual!
- After purchase, primary AC power must be carried out by a licensed electrician.

**Technical Specifications**

Hardware	CPU RENESAS M16C80
	256 kB-EPROM/FLASH
	256 kB-SRAM
	Serial EEPROM
	RTC
	Pluggable 64 MB compact flash Extensions: 128 MB, 256 MB or 1 GB

	Battery for SRAM and RTC
	Host address can be set via sliding switch
	Host interface: - RS485 (2- or 4-wire) - RS232 - Ethernet 10BaseT (TCP/IP) with optional RJ45
	4 Wiegand reader interfaces
	8 relay outputs
	8 analog inputs
	Tamper switch
	Ethernet 10BaseT (TCP/IP) with RJ45 2 (4) opto-decoupled RS485 interfaces
	LBus; RS485 interface, opto-decoupled, 2-wire, 19,200 Bd
	Reset button
Temperature	0°C to +45°C (32°F to 113°F)
Power supply	10 to 30 VDC, max. 60 mA Available for external devices: 55 mA
Environment class	IP 30
Housing	Base: PPO (UL 94 V-0) Upper: Polycarbonate (UL 94 V-0)
Color	White
Dimensions	WxHxD: 232 x 90 x 63 mm (9.13 x 3.54 x 2.48 in.)
Weight	Approx. 0.53 kg (1.17 lb)
Type	Rail mounting

### Ordering Information

AMC2 4W-NET - Wiegand Interfaces	APC-AMC2-4W
AMC2 4W-NET-CF - Wiegand Interfaces	APC-AMC2-4WCF
AMC2 4R4 - RS-485 Interfaces	APC-AMC2-4R4
AMC2 4R4-CF - RS-485 Interfaces	APC-AMC2-4R4CF

### Accessories

AMC CF-128 memory expansion Compact Flash memory with 128 MB storage to expand the capacity of the AMC-4W.	AMC CF-128
AMC CF-256 memory expansion Compact Flash memory with 256 MB storage to expand the capacity of the AMC-4W.	AMC CF-256
AMC CF-1024 memory expansion Compact Flash memory with 1 GB storage to expand the capacity of the AMC-4W.	AMC CF-1024

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