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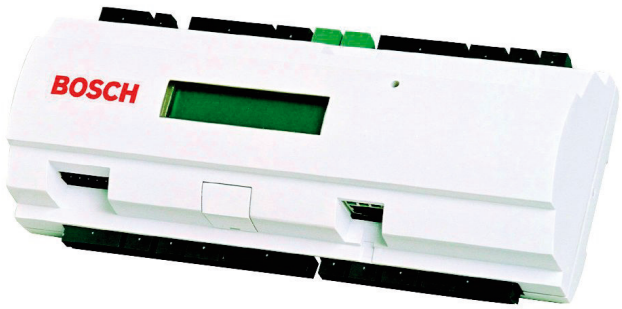
AMC - Access Modular Controller

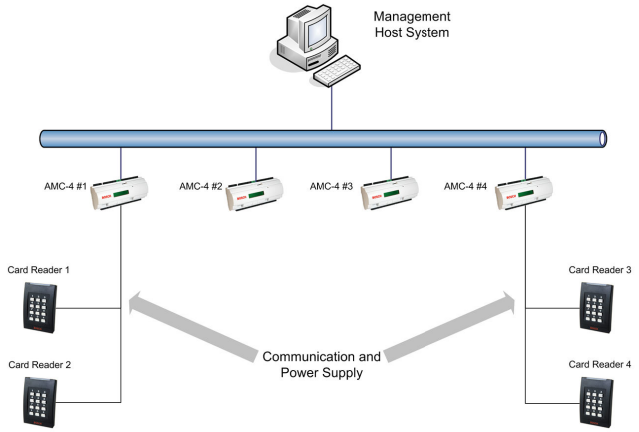


- **Four built in Wiegand reader interfaces with distributed intelligence**
- **On-board LCD diagnostic display**
- **Built in on-board Ethernet, RS485 or RS232 host connections**
- **Field selectable wet or dry lock outputs**
- **Tamper protected plastic enclosure included**
- **Compact modular design for smaller mounting footprint**
- **Support for up to three extension I/O boards per AMC**

The AMC (Access Modular Controller) is used as the access controller for the ACE Access Engine electronic access control system. The unit controls a group of 1 to 4 access points. These access points are also called entrances, for controlling doors, gates, barriers, turnstiles of various types, man-traps, card readers, door opener elements, and sensors. The AMC can work with up to 4 Wiegand card readers.

Diagnostic display status for 8 input and 8 outputs. The AMC retains all required information in memory, in order to independently conduct an authorization check at the access point, make entry decisions, control door opening/closing elements and register entry events, even when offline.

System Overview



As shown in the illustration, the AMC is incorporated between the host system Access Engine and the peripheral units.

All AMCs are ready for host connections via Ethernet, RS485 or RS232. If operated with RS485, up to eight AMC-4Ws can be connected via a two or four wire bus per serial connection.

Up to four complete wiegand reader terminations are included per AMC.

The AMC, as a default, supports readers using the following Wiegand formats:

- 26 bit
- 32 bit
- 35 bit
- 37 bit

Virtually unlimited Wiegand card formats can be supported using the ACE Card Definition dialog in the BIS Configuration Browser.

Functions

- Fully distributed intelligence:
  - Master data
  - Authorizations
  - Access models
  - Display texts
  - Reader parameters
- Interpretation of the transaction data by the reader
  - Authorization check
  - Host query
  - Pin code
- Control/monitoring
  - Granting or denying access
  - Alarm switching
  - Door status
  - Reader operating status
  - Internal alarm status
- Messages about the Access Engine
  - Host queries
  - Transaction data to be saved
  - Errors and fault messages
  - Alarm messages

Installation/Configuration Notes

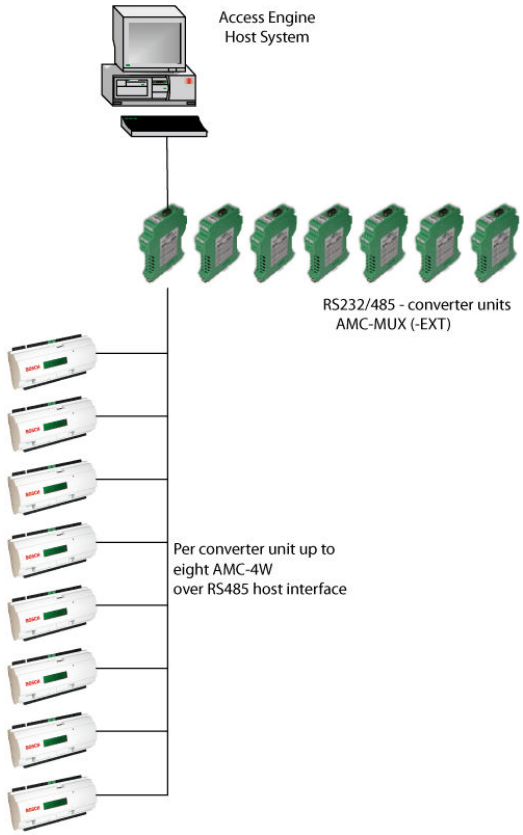
Host ports

RS232 host interface

The Access Engine application administers up to 32 serial COM ports so that it is theoretically possible to serially connect up to 32 AMCs directly.

Note RS232 serial connections are limited to the number of serial COM ports supported by the PC and is limited to a maximum wire length of 50 feet (15 meters).

RS485 interface



For applications where multiple AMCs are required, up to eight (8) AMC can be connected via RS485 (2 or 4 wire) using the RS232 to RS485 interface converter.

Note RS485 is limited to a maximum wire length 4000 feet (1200 meters).

Ethernet interface

For large scale multi AMC applications the built in NIM is the preferred method for PC interface connections.

Note A maximum of 150 UDP connections per network.

Volume limitations

- Please follow the planning guidelines for the Access Engine when determining the max. number of access controllers connected to an access control system as well as the number of employees
- Max. 4 access points/entrances
- Max. 4 card readers
- Max. 3 extension I/O boards via internal RS485 bus
- Max. 200000 employees with memory expansion ACX-CF1024 (MB)

Card reader connections

Wiegand interface

The AMC has 4 connections to connect up to 4 card readers.

The card reader interfaces and door opener elements are distributed to the 4 channels with 4 connectors points each.

The following definitions apply to Wiegand interfaces:

- 10-wire interfaces (incl. shield)
- Max. 500 feet (158 meters) cable length to card reader

Standard configuration of the Wiegand interface for the card reader:

1	Reader power supply 12V+
2	Reader power supply 12V-
3	Data line 0
4	Data line 1
5	Shield
6	Green LED
7	Red LED
8	Audible alarm
9	Delay
10	Present card

Readers and door models

The AMC administers the connected readers via pre-defined door models.

Door models regulate in accordance with the security requirements in force. For example:

- Read in
- Read in - read out
- Mantrap
- Elevator
- Turnstile
- Special area and parking lot entrance/exit control

The max. number of entrances to be administered by an AMC is ultimately determined by the door models used and the readers and inputs/outputs required by the door models.

Note When planning an access system, the first step is therefore assigning the necessary or suitable door models to all entrances which must be monitored. As an example when using the read in - read out door model, two reader connections are utilized.

Potential equalization – grounding

- If there are different earth potentials, they can be equalized via jumper positions with a protective earth.
- A line (shielding, potential equalization line) may only be connected to the protective earth at one point.
- You will find more information on this topic in the installation manual.

Contacts

Inputs

The eight analog inputs can be used as digital or analog contacts. For analog use, resistor values can be assigned that permit 4 state monitoring and cable supervision.

Relay outputs

The 8 relay outputs can operate in the following modes by means of the jumper position:

- Dry outputs for switching external power.
- Wet output, voltage direct from AMC.

General notes

- Installation should be performed in the "secured area".
- You will find detailed connection conditions in the installation manual.
- Any high voltage connects should only be attempted by authorized installers.

Technical Specifications

Hardware	CPU RENESAS M16C80
	256 kB-EPROM/FLASH
	256 kB-SRAM
	Serial EEPROM
	RTC
	Plug-in Compact Flash memory 64MB Expansions: 128 MB, 256 MB or 1 GB
	Battery for SRAM and RTC
	Host address can be set using slide switch
	Host interface: - RS485 (2 or 4-wire) - RS232 - Ethernet 10BaseT (TCP/IP) with RJ45 optional
	4 Wiegand slave interfaces
	8 relay outputs - rated at 2 amps at 30 VDC
	8 analog inputs - two, three and four state supervision options
	Tamper switch
	Ethernet 10BaseT (TCP/IP) with RJ45 2 (4) opto-decoupled interface RS485
	LBus; RS485 interface, opto-decoupled, 2-wire, 19,200 Bd
	Reset push-button
Temperature	0°C to +45°C
Supply	12V DC, max. 60VA Available for external units: 56 VA
Protection type	IP 20
Housing	Base: PPO (UL 94 V-0) Cover: Polycarbonate (UL 94 V-0)
Color	White
Dimensions	W x H x D (mm): 225 x 88 x 60
Weight	Approx. 0.4 kg
Construction type	Rail mounting

Ordering Information

AMC-4W-NET access controller with Wiegand slave interfaces and network connection to the host system Access Engine.	**AMC 4-W-NET**
AMC-4W-NET-CF access controller Wiegand slave interfaces, network connection to the host system and Compact Flash memory.	**AMC 4-W-NET-CF**
Accessories	
AMC2 8I-8O-EXT 8 input/output extension board, up to three per AMC, can be combined with the AMC2 16I-EXT and the AMC2 16I-16O-EXT	**API-AMC2-8IOE**
AMC2 16I-16O-EXT 16 input/output extension board, up to three per AMC, can be combined with the AMC2 16I-EXT and the AMC2 8I-8O-EXT	**API-AMC2-16IOE**
AMC CF-256 memory expansion Compact Flash memory with 256 MB storage to expand the capacity of the AMC-4W.	**ACX-CF512**
AMC CF-1024 memory expansion Compact Flash memory with 1 GB storage to expand the capacity of the AMC-4W.	**ACX-CF1024**
PBC-60 - power supply and battery charger A power supply unit with an integrated battery charging device.	**APS-PBC-60**
Gel Battery 12 V / 7.2 Ah (DU = 1 unit)	**IPP-12V-7.2Ah**
AMC-MUX interface converter Interface converter – RS-232 into RS-485/422	**ACX-AMC-MUX**
AMC-MUX-EXT interface extension An extension module for the AMC-MUX to create a network star topology.	**ACX-AMC-MUXE**
AMC2 ENC-UL1 - Enclosure - Small AMC2 enclosure with single din rail.	**AEC-AMC2-UL1**
AMC2 ENC-UL2 - Enclosure - Large AMC2 enclosure with two din rails.	**AEC-AMC2-UL2**
AMC RAIL-250 mounting rail Mounting rail (250 mm) for mounting the access controller AMC-4W without the metal housing AMC ENC-V1.	**ACX-RAIL-250**
AMC RAIL-400 mounting rail Mounting rail (400 mm) for mounting the AMC-4W, AMC PS-12V-60W and AMC UPS-12V when the metal housing AMC ENC-V1 is not used.	**ACX-RAIL-400**

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T1768305291 | Cur: en-US, V7, 20 Feb 2009