



## AX1011 RS422-module for AP1003

*Installation sheet*

### GENERAL

The AX1011 is intended to connect certain XS-controllers (MD300 loop) to AEOS (AP1003). The XS controllers are changed in such a way that their Inputs/Outputs behave exactly like AEpack In/Outputs. This means that a full functional AEOS system can be built utilizing existing XS hardware.

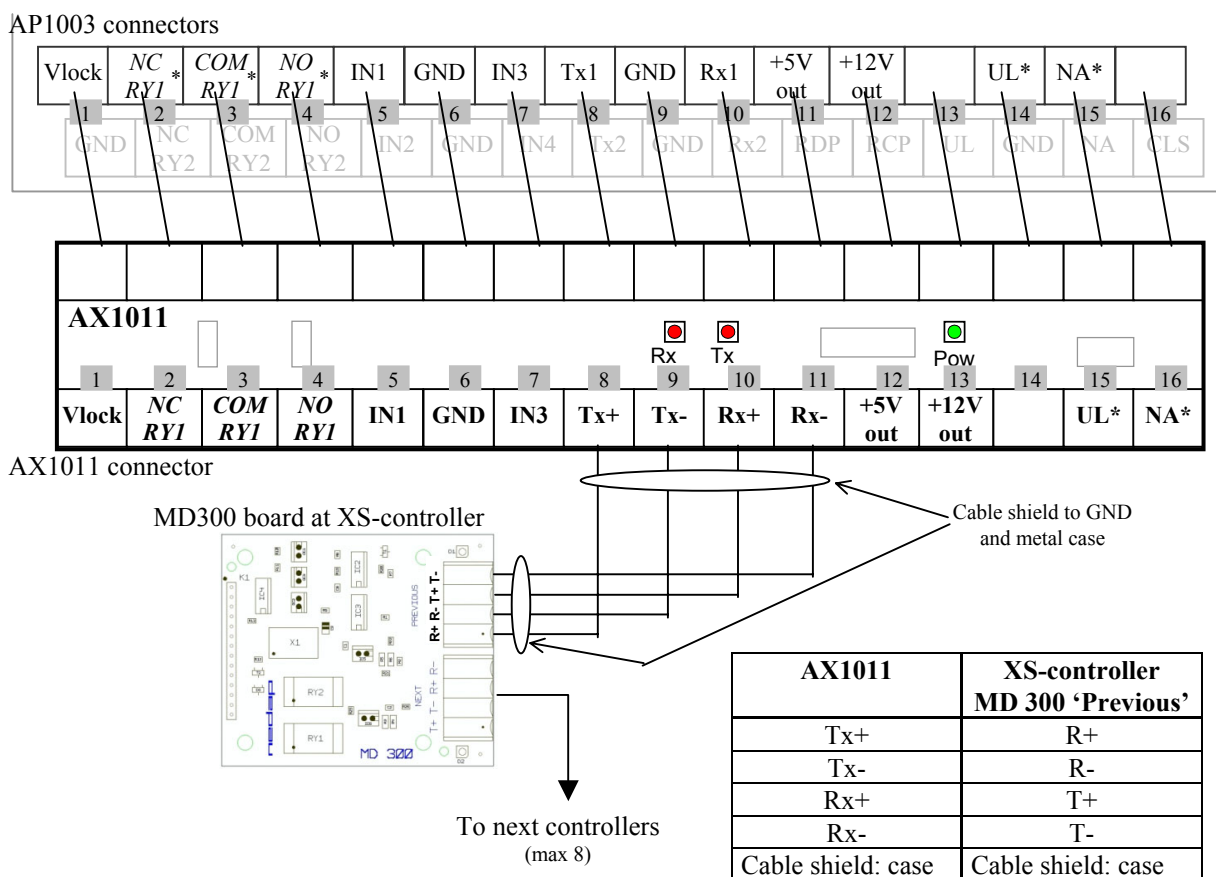
The AX1011 is connected to the AP1003 (only suitable for the upper connector). The RS232 signal of the AP1003 is converted to an isolated RS422 signal, which is used to connect an MD300 loop of XS controllers.

To connect the XS Controller loop to AEOS using the AX1011 special firmware is required at the AP1003 and the connected XS-controllers in the MD300 loop.

### CONNECTIONS

Place the AX1011 at the **upper** connector of the AP1003. The original signals of the AP1003 (except for Tx1,GND and Rx1) are lead to the screw connector of the AX1011.

**Attention:** Signals of pin 8 and higher are at the AX1011 located at another pin than the original AP1003 (see figure below).



**Cable shield:** Cable shield **must** always be connected to metal case on both sides (AEpack and XS-controller).

**FIRMWARE**

The AP1003 must have the firmware AP1003XS\_543 (Integration Firmware)

**SUPPORTED HARDWARE and REQUIRED FIRMWARE for CONTROLLERS**

The table beside gives the supported XS-controllers with the needed firmware for these controllers.

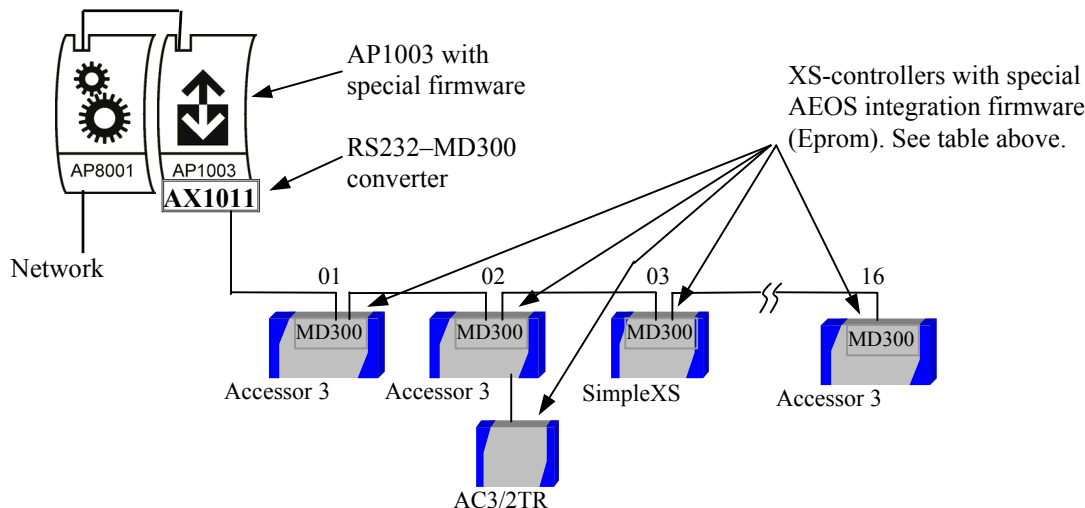
Non-supported XS-controllers should be replaced by appropriate AEOS hardware.

Bear in mind that a XS-controller may be equipped with a (very) special firmware which function can not directly be replaced by standard AEOS behaviour components.

XS-controller	Supported	Firmware
Accessor 1	No	-
Accessor 2	No	-
Accessor 3 (all)	Yes	A3PNU_AEOS
Acc 3 IO-board	Yes	not applicable
Acc 3 I/O-Expander	No	-
Acc 3 IO2012	No	-
AC3/2TR	Yes	H7A3U_AEOS
SimpleXS	Yes	A0PNU_AEOS
IOBoXS	No	-

The AX1011 only functions on masterless MD300 (RS422) loops with above supported XS-controllers, communication must be 9600 Bd.

**HARDWARE CONFIGURATION**



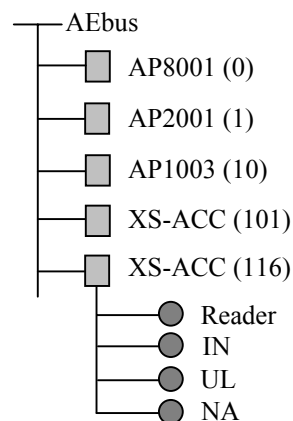
A loop of 8 XS Controllers can be controlled by a single AEpack/AEpu pair. However, keep in mind that the integrated loop becomes less decentralized compared to the original XS loop. This can partly be compensated by splitting long XS Controller loops into several small loops each controlled by separate AEpack/AEpu pairs.

The maximum amount of XS controllers is limited to 8. If more than 8 XS controllers exists in one loop, this loop must be split up into two AP1003 with AX1011 (or on two AEpu's, depending on the amount of cards and building structure).

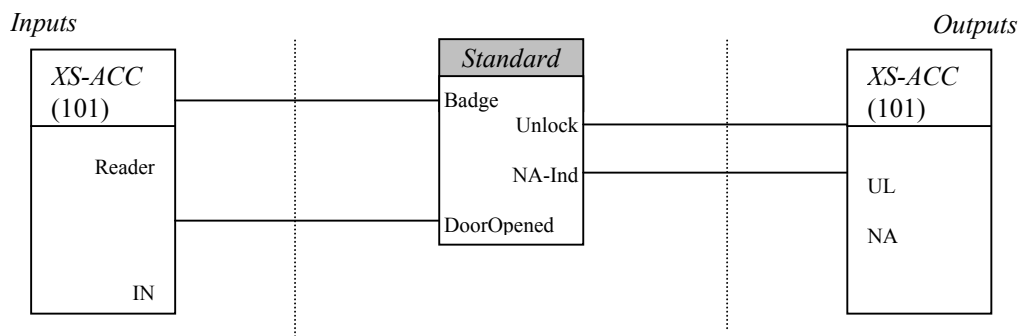
**HOW IT BEHAVES**

The integrated XS hardware appears in AEmon's hardware view as a set of special devices.

Whereas AEpacks are using address range 0..99, the new XS devices use range 101..116 corresponding to their loop address 01..16.

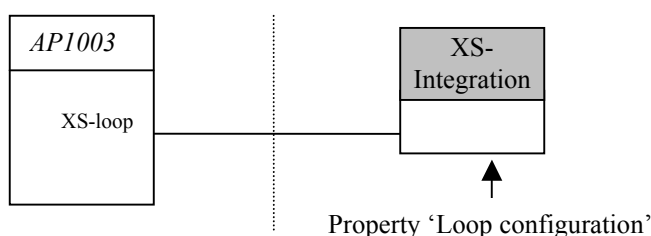


Standard behaviour components (AEbc's) can utilize the devices the same as with AEpacks:



### HOW IT WORKS

A 'XS-Integration' AEbc communicates with the XS hardware through a 'XS-Loop' device object located on an AEpack. The AEpack's 'XS-Loop' implementation firmware communicates through its serial port with the loop. The XS-Integration' AEbc makes the XS-controllers on the loop available as devices which can be bound to standard AEOS behaviour components. At the Properties of this AEbc the amount of available XS-controllers can be set.



### INTEGRATION STEP BY STEP

- If necessary renovate the loop in order to get a masterless MD300 (RS422) loop
- Replace the Eeprom of the supported XS-controllers with the special AEOS-integration Eeprom
- Replace non-supported XS-controllers by AEpacks
- Install the integration AEpu/AEpack including the AX1011
- Configure the 'XS-Integration' AEbc on the AEpu
- From now on the configuration is the same as for a standard AEOS system

#### SPECIFICATIONS AX1011 (Product nr. 7818742)

Dimensions: 84 x 45 x 15 mm (suitable to fit beneath bottom cover of AP1003)  
 Power: From AP1003  
 Environment: Temperature: Operating: 0 – +55 °C, Storage: -30 – +65 °C      Relative humidity: 10 – 93% non condensing  
 Communication: R232 in, RS422 galvanic isolated (MD300) out

#### CABLE SPECIFICATIONS

XS-controller loop: Multidrop MD300 (RS422)  
 2 x 2 x 0,25mm<sup>2</sup>, max total loop length: 1200 meter, cable capacity <= 100pF/meter  
 or: 100Ω utp/s cat.4 2 x 2 x 0,25mm<sup>2</sup>  
 Baudrate: 9600 Bd

**MORE INFORMATION:** For more detailed information contact your local Nedap supplier or check the internet site.