



***ATEUS*[®] - APS MINI**
STANDALONE READER MODULE

Order No. 9134162E



User and Service Manual

Version 1.0

Introduction

Dear customer, let us congratulate you on having purchased the ATEUS[®] - APS mini Standalone Reader Module. We hope that this product will make you happy for a long time. Since it is a brand new product, which is subject to steady improvements, we will be pleased to hear your comments and recommendations if any.

Module Characteristics

The ATEUS[®] - APS mini chip card reading module is designed for simple personnel access/entry and attendance control applications using chip cards. It is composed of a main board and reading antenna for contactless chip card code reading. The antenna has a standard form of a blank key module for the ATEUS[®] - EntryCom door communicator and so it is easy to install it into the door communicator and extend the same with an ATEUS[®] - APS mini module.

Operation Modes

Autonomous ... programming cards are used for programming the access right database ("adding" and "deleting" cards).

Offline ... a PC is used for programming the access right database and setting the reading module/reader operation parameters.

Online ... the PC communicates continuously with one reading module or a reading module network (up to 16 modules) and stores all system events into the archives.

ATEUS[®] - APS mini is designed for all operation modes. By default, it is equipped with 2 programming cards for adding and removing user rights without the need to interconnect the reader and the PC (autonomous mode).

The PC-based reader controlling software in the offline and online modes can easily be downloaded from www.2n.cz, the *Technical support* → *Download* section. You can also download related user manuals from here. To communicate with the reading modules using your PC, install an RS485/RS232, RS485/USB or RS485/Ethernet communication converter to the communication line.

Overview of Module Functions in Operation Modes

Function	Operation Mode		
	Autonomous	Offline	Online
Access right defining by programming cards	✓	✓	✓
Card reading and door lock release signalling	✓	✓	✓
Acoustic alarm status signalling	✓	✓	✓
Change of operation and alarm status parameters		✓	✓
Access right defining by a PC		✓	✓
Reading module status visualisation, event storing in PC archives, event tracking and processing			✓
Reader output control directly by PC			✓

Technical Parameters

Dimensions	90 x 55 x 25 mm
Weight	0.25 kg
Power supply	10 ÷ 15 VDC
Max. supply current	150 mA
ID technology	EM Marin
Max. count of access cards per memory	500
Input type	2, logic level, potential-less
Output arrangement	relay, 1C contact, 2 A / 24 V
Tamper-protecting contact	optoelectronic
Max. reading radius	typically 8 cm with ISO chip card
Communication channel	RS485, galvanically non-isolated
Signalling	3x LED + piezo buzzer
Operation temperature range	-25 ÷ +50°C
Max. relative humidity	max. 93%, non condensing
Installation cable length	1.5 m

Configurable Operation Parameters

Parameter	Values to be programmed
Lock release timeout	2 ÷ 255 s
Door ajar delay	2 ÷ 255 s
Acoustic signalling time - tamper	2 ÷ 255 s
Acoustic signalling time - door breaking	2 ÷ 255 s
Acoustic signalling time - door ajar	2 ÷ 255 s
Second input function	outgoing button / handle contact

Assembly

To assemble the reading module use dowels and appropriate screws (Figs. 1, 2). Pull the interconnecting cable into the tube and connect it to the installation box. Having tightened the screws, put on the cover to the top and then rotate and press the bottom part until the arresting catches click (Figs. 3, 4).

To disassemble the reading module cover release the arresting catches with the key provided in the delivery and remove the cover by moving the bottom part up (Figs. 4, 5).

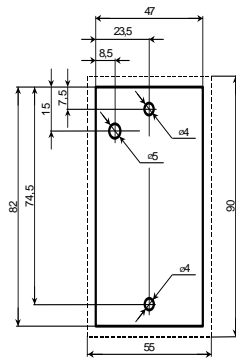


Fig. 1

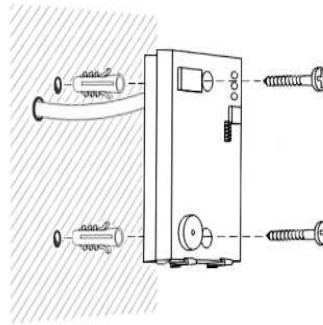


Fig. 2

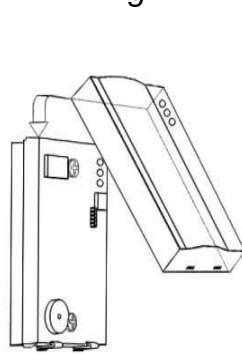


Fig. 3

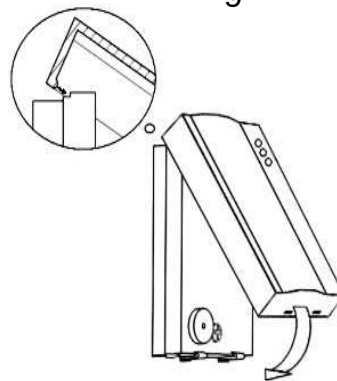


Fig. 4

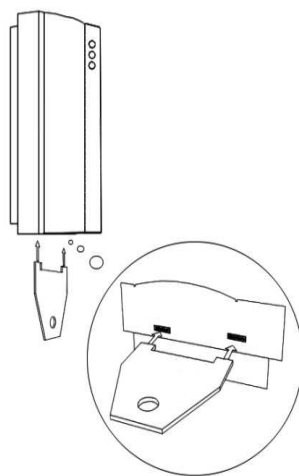


Fig. 5

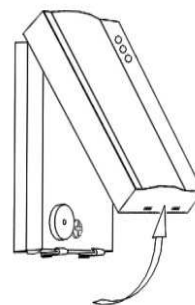


Fig. 6

Assembly Recommendations

The *ATEUS*® - APS mini reading module is based on the passive RF/ID technology sensitive to external RF interference. This interference can be either radiated from the surrounding environment or conducted.

Therefore, it is not recommended to install the modules near potential electromagnetic field sources, such as PC monitors (within the distance of up to 3 m) or various household and industrial electrical appliances. You are also advised to use recommended power supplies (linear) in order to minimise conducted interference.

From this point of view, it is also necessary to consider mutual interference of reading modules - keep the minimum inter-module distance of 50 cm. This distance can also be affected negatively by adjacent metallic structures (in case of doubts, perform a practical on-site test before assembling).

Metal surfaces near the antenna may absorb the electromagnetic field or detune the module antenna and thus impair the proper function and reading distance – we recommend you to carry out a practical test in this case too.

Module Wiring

Wire description

Colour	Meaning
Red	+12 VDC power supply
Blue	0 V
Black	RS485 line A conductor
White	RS485 line B conductor
Green	RS485 line shield
Yellow	Input 1
Gray	Input 2
Orange	NC relay contact
Brown	C relay contact
Violet	NO relay contact

The reading module inputs must be controlled by a potentialless contact. Connecting the input to 0V is considered the active status.

Power supply interconnection

The door communicator power supply can be used for supplying the main board advantageously. The only condition is that this power supply should have a power reserve for feeding the reader module (150mA) and door lock (depending on the type). The rated voltage of the power supply must be 10 ÷ 15V dc. If the existing power supply fails to comply with these conditions, install a new one for the reader.

Door lock/contacts interconnection

The relay contacts are used for door lock switching. Use contacts "C" and "NO" for standard locks which unlock by the presence of voltage, and contacts "C" and "NC" for locks that get unlocked in the case of voltage failure and keep locked while voltage is present. Carry voltage from the power supply through these contacts to the door lock.

If you have a contact on the door that gets activated with the door open, carry the contacts to input 1 and 0V (yellow and blue wire). If you do not have this type of contact on your door, interconnect the input 1 and 0V wires. Without this interconnection the door lock would unlock only for approximately 0.5 s because non-activated door switch terminals would report an open door.

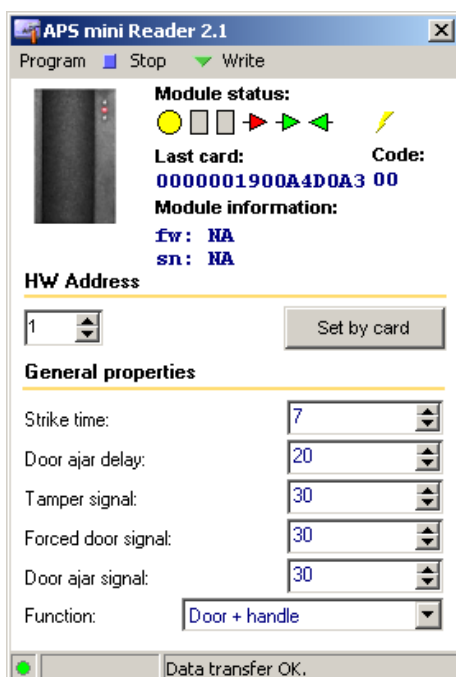
The input 2 function can be set for the outgoing button or handle contact. The outgoing button is used in the "knob-knob" door mode for opening the door to a person coming from the interior (leaving the building). The handle contact is used in the "knob-handle" door mode. If you do not have the handle contact on your door installed and the door contact is activated on input 1, interconnect the input 2 and 0V wires and set the input 2 function at the "handle contact". By doing so you avoid the "broken door" alarm message when the door is handle-opened from the inside.

RS485 data bus interconnection

You can connect an RS485 data line to the A, B and 0V wires. Up to 16 ATEUS[®] - APS mini reading modules can be connected to this three-wire line.

Use data transmission cables only for the data bus (shielded cables or twisted pairs). In the last data bus module (last line module), attach the terminating resistor by inserting a shorting jumper onto contacts S20.

Parameter and Access Right Setting by PC



The APS mini Reader setting software is designed for Windows 95, Windows NT 4.0 and higher operating systems and requires no installation. The program is intended for the offline mode of the reading modules. It allows you to program operation parameters for every ATEUS[®] - APS mini module connected to the RS485 data bus. It can not be used for access right setting. To connect the modules to your PC you need either an RS485/RS232 (or RS485/USB) communication converter with automatic communication direction reversal, or an RS485/Ethernet converter with the following settings: 8 data bits, even parity, 19,200 bits per second, 1 stop bit.

The main program menu contains the following commands:

- Program → Setting ... displays settings of the PC COM port and service card code;
- Start / Stop ... PC- module communication control;
- Write ... writes the general parameters to be configured into the reading module;
- Program → End/Quit ... program end.

The program window is divided into three parts as follows:

- Reading module status visualisation (check of the module wiring correctness);
- HW address setting;
- Controls for general module settings.

The following indicators are located in the status line (from the left):

- PC - module communication status (red = communication errors, green = no errors);
- Operation parameter setting progress;
- Verbal description of the communication status.

HW address setting

The HW address of reading modules is 1 by default. To connect multiple reading modules to the communication line, set a unique address for each of them. To set the address via the communication line from your PC take the following steps:

- Connect the module(s) to the communication line;
- Enter the required address into the "HW address" input field;
- Press the "Set by card" key to make the program send an address setting command; the module then waits for about 25s for request confirmation by service card reading (the service card may be any card whose code has been entered in the "Service card" field in the program setting menu), this waiting process is indicated by a quick double flash of the red LED in the interval of approximately 2s;
- Once the service card has been read, the program starts communicating normally with the reader.

Operation parameter setting

To set the operation parameters entered in the corresponding input fields of the program, press the "Write" key during communication. The process of writing is indicated by the progress indicator in the second part of the status line.

The *APS mini Administrator*, *APS mini Events* a *APS mini.ED* programs are designed for the use of *ATEUS*® - APS mini modules in the online mode. In addition to module parameters programming, they allow the user to set up the access rights and to monitor and analyse relevant events (e.g. arrivals and departures of persons). You can download the first two programs including user manuals free of charge from www.2n.cz, *Technical Support* → *Download*, the third program can be purchased.

Access Right Setting by Programming Cards

You can also program the access rights of the ATEUS[®] - APS mini reading modules without a PC, using two programming cards, which are included in the module delivery.

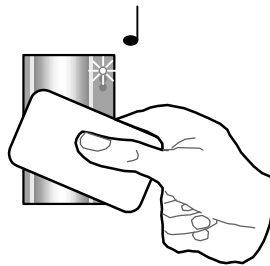
Adding cards to the memory

Step 1



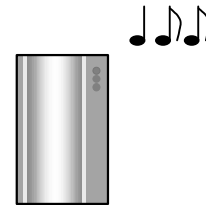
Apply the adding programming card; the reader goes into the programming mode (the yellow LED glows in this mode).

Step 2



Apply sequentially all cards that are to be assigned the access right in the particular place.

Step 3



The reader transits automatically into the standard operation mode in approximately 15 s after the last card is applied.

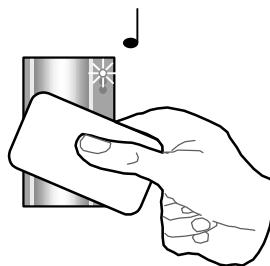
Deleting cards from the memory

Step 1



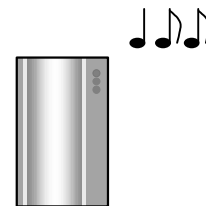
Apply the deleting programming card; the reader goes into the programming mode.

Step 2



Apply sequentially all cards from which the access right is to be removed in the particular place.

Step 3



The reader transits automatically into the standard operation mode in approximately 15 s after the last card is applied.

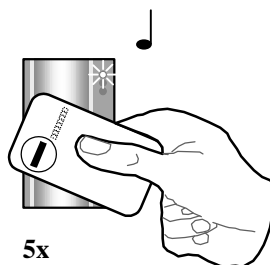
Clearing of all programmed cards

Step 1



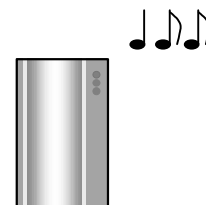
Apply the deleting programming card; the reader goes into the programming mode

Step 2



Apply the deleting programming card 5 times in a sequence; the reader clears the card memory.

Step 3



The reader transits automatically into the standard operation mode.

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