POPULUS A-1-NET and POPULUS A-3-NET – ACCESS CONTROLLER

The Populus A is an access controller with built-in proximity card reader. It is designed for residential and business buildings, offices, shops, etc. The controller can have 125kHz or 13.56MHz reading frequency.

The entire set-up procedure is carried out with the software. The controller allows access for up to 30000 users and saves 100000 events. It is intended for controlling entries, exits and passes of users in the system and controlling sliding doors, ramp, el. strike, turning alarm on/off… It needs to be set with CODEKS software.

The SDK is also available for this controller. If a user or software producer wants to develop its own application, please contact us.

TECHNICAL DATA

POPULUS A	
A-1-NET reading frequency	125kHz
A-1-NET reading distance	Up to 12cm
A-1-NET current consumption	130mA
A-3-NET reading frequency	13.56MHz
A-3-NET reading distance	Up to 8cm
A-3-NET current consumption	150mA
Dimensions (mm)	120x96x15 (WxHxD)
Protection	IP65
Communication	RS485 & Ethernet
Operating voltage	From 10V to 60V DC
Operating temperature	From -20°C to 60°C
Cabel	12 wires - 25cm
Memory	30000 cards or codes 100000 events
Inputs	Door status Push button
Outputs	Transistor output for el. strike 0.5A
Clock	Real time clock, battery backup (max. ten hours)

CONNECTION WIRES

Wire-Color	Description	Specification
1 – red	10-60V DC	Power supply
2 – gray	GND	Ground
3 – green	El. strike output	Max. 0,5A Active = GND
4 – white	Alarm output	Active = GND
5 – yellow	Door status switch input	Active = GND
6 – orange	Push button input	Active = GND
7 – light blue	CA	RS485 A line
8 - brown	CB	RS485 B line

ETHERNET WIRES

Wire-Color	Description	Specification	RJ45 connector
1 –dark blue	Ethernet	TXP	1 – white/orange
2 –pink	Ethernet	TXN	2 – orange
3 –black	Ethernet	RXP	3 – white/green
4 –purple	Ethernet	RXN	6 - green

POWER SUPPLY

The controller need's external power supply to operate.
The Spider W40 power supply is sufficient to power two controllers and two 12V electric strikes or two 12V magnetic locks (0.5A).
The Spider W5 power supply is sufficient to power one controller and one 12V electric strike (0.25A).

VOLTAGE DROPS and SIGNAL INTERFERENCES

When you connect the controller, use cable with a diameter of at least 0.22mm^2. If the cable length exceeds 25m, use one twisted pair of UTP cables for the positive (+) pole and one for the negative (-) pole. The cable length between power supply and the controller should not exceed 50m.
Take into consideration that a 0.22mm^2 cable has a resistance of approximately 9 ohm per 100m. The power supply at the end of cable should be a minimum of 11V. If you are using el. strike, it is highly recommended that the voltage drop is calculated. At greater distances, a thicker cable of 0.5mm^2 or more should be used wherever possible.
If the load is, for example, 0.5A (with el. strike) then, on the 0.22mm^2 cable voltage drop will be 4.5V at 100m. For the device with 60mA consumption, the voltage drop is 0.5V.

Reading distance depends on where the controller is installed. The presence of metal or interferences can significantly reduce the reading distance. **DO NOT** install the controller directly on metal surfaces and/or cover it with a metal cover.
It is **not recommended** to install controllers closer than **30cm** from each other in any direction. Otherwise, it may result in inaccurate readings or, indeed, in the controller **not reading at all**.

For Populus A-3-NET to comply with EMC directives (CE), you have to put ferrite core on the cable as close to the reader as possible, making two turns!

INPUTS

Inputs are realized with opto-isolators. The input is active, when pulled to ground with an open collector transistor or mechanical switch, which is connecting the input pin of the controller to the Ground.

OUTPUTS

Output has a pre-installed protection diode for an inductive load. It is also protected from current overload. The best way is to use a 0.25A el. strike or a 0.5A el. magnet, which has to be connected to the same positive pole (+) as the controller. Connect the negative pole (-) to the door strike output (wire 3). When the output is active it is pulled to ground. This can be changed with function 5 – negate output (for el. magnet).

ENVIROMENT

Do not install the controller on/in a place, where it can come in contact with water. You must assure good cable joints, protected against moisture, otherwise corrosion may damage the controller. Damage in such cases is not covered by the warranty.

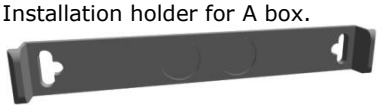
READING RANGE

The controller has a program algorithm that, at power start, sets parameters based on the installation environment, so as to ensure an optimal reading range. **DO NOT** install the controller directly on metal surfaces and/or cover it with a metal cover; it may stop working/reading. If you plan to test the controller and move it onto different surfaces, then you have to reset it (power off/on) on each surface.

INSTALLATION

A special holder, provided with the controller, is needed for attachment to the wall. Two screws are enclosed in the box. After the holder has been affixed, put the controller onto the holder and press – after you hear the click, it is fixed. If you want to remove the controller from the wall, put the screwdriver under the controller's casing (as close as possible to the holder's attachment points) and turn it gently.

Installation holder for A box.



COMMUNICATION

Ethernet:

Connect the controller to the computer through your LAN via Ethernet connector. Use at least UTP CAT 5e cable. Adjust network settings of the controller using the Codeks Device Manager software so that it will function properly in your network. Please consult Codeks Device Manager's manual.

RS485:

Connect the controller to the computer, with one of the power supplies, with communication converter, from the Spider family: Spider W5-USB, Spider W5-NET, Spider W40+NET.

The RS485 communication bus is used between the controllers and Jantar software. Up to 128 controllers can be lined up into one communication line. The maximum length of the communication line is 1000 cable meters. It is recommended that you use an FTP or S-FTP cable. Only a serial connection of controllers in a single communication line is allowed. **Star (parallel) connection is not allowed**.
All shields of S-FTP cables must be wired together and at **one point** connected to the earth. Individual connections to the earth are not allowed. Do not connect the shield of the cable to the ground of the controller.

In the event of problems in communication, a termination resistor needs to be added. We recommend using 120 Ohm resistors on each side of the cable. Converters are, on the RS485 side, protected with slow-blow fuses and transient voltage suppressors.

ACCESS CONTROLLER

As an access controller, it is intended for controlling entries, exits and passes of users in the system and controlling sliding doors, ramp, el. strike, turning alarm on/off… It needs to be set with CODEKS software.

The default address of the controller is the same as the last digit of the IP address. E.g. if the IP address of the controller is 192.168.110.105, then the controller's address is 105.

Reset to the factory settings (brainwash):

When the controller is reset to the factory settings (brainwash), the controller address is set to 255.

ORDERING CODES

Populus [box]-[card]-[software]
Box: **A**
Card: **1** - 125kHz reading frequency (cards)
3 - reading frequency 13.56MHz (cards)
Communication: **NET** – Ethernet connection

Code	Specification
POPULUS A-1-NET	Access controller in **A** box, 1 outputs, 1 reader, Frequency 125kHz, Integrated Ethernet, for CODEKS
POPULUS A-3-NET	Access controller in **A** box, 1 outputs, 1 reader, Frequency 13.56MHz, Integrated Ethernet, for CODEKS

OTHER

Please read through our warranty and disclaimer statements.

Connection scheme and additional support for the use of this product can be found on:
http://www.jantar.si/forum/en

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