



Installation Manual

ELEVATOR STANDARD CONTROLLER

KDH-KS3000-IP-ELV



VERSION 4.0 20-07-2021



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1. Introduction

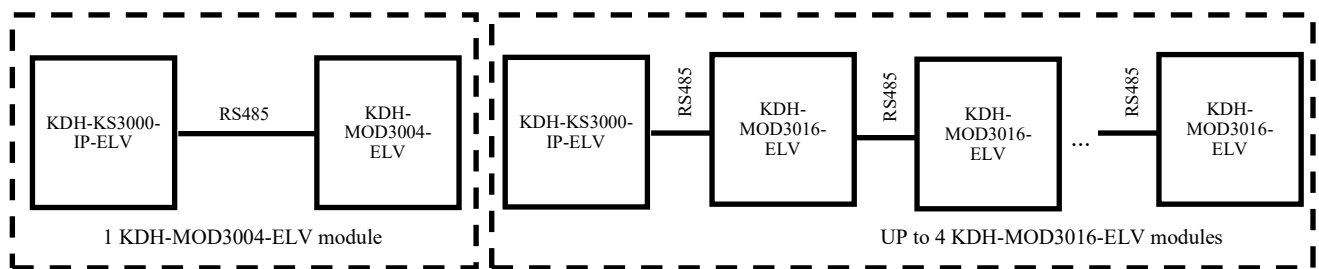
KDH-KS3000-IP-ELV standard controller is designed to be used in access control system, managed by **NMS Advanced Control** software. Standard controllers (unlike integrated controllers) are made in the form of modules, placed in metal enclosure with power supply. They are located in the protected area. Other system components (readers, electric locks, buttons) are installed next to the controlled door and connected to the controller. Such solution guarantees higher system security level, compared to integrated controllers. Readers can use any identification technology, provided they adopt Wiegand 26-40 bit interface.

KDH-KS3000-IP-ELV model is designed to cooperate with elevator control system. The cooperation is held by controller's relay outputs connection with elevator control system. The controller has 5 relays. KDH-MOD3004-ELV extension module offers 4 additional relays, KDH-MOD3016-ELV - 16 relays. Overall it allows to control access to 69 floors within one device set to which one card reader located on floor choice panel in cabin is connected. The access to chosen floors for a card is assigned in NMS Advanced Control software.

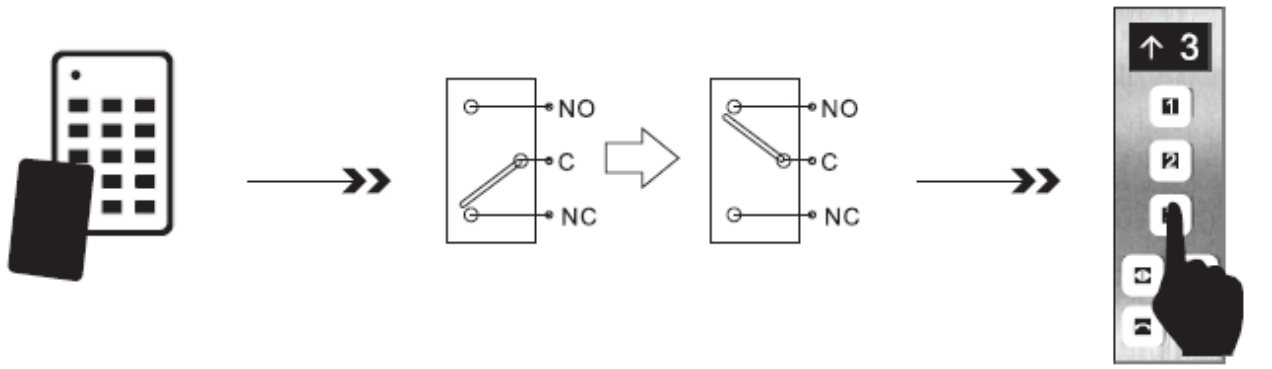
KDH-KS3000-IP-ELV model has built-in IP port for communication with NMS Advanced Control software. It is also provided with additional RS485 port, in order to connect extension modules.

List of the most important controller features and parameters is presented in a table on the next site.

Possible extension modules connections:



Cooperation with elevator control system scheme:



Valid card reading -> Floor relay switching -> Floor choice button circuit closing

2. KDH-KS3000-IP-ELV controller technical data

Parameter or function name	Parameter value - function description
Buffer capacity	
- Card buffer	20 000
- Event buffer - Alarm buffer	50 000 (auto delete of the oldest) 20 000 (auto delete of the oldest)
Electrical parameters	
- Supply voltage / Current load	12 VDC / 100 mA
Environmental parameters	
- Environment	For indoor installation only
- Operating temperature	-10°C do +55°C
- Relative humidity	10% - 90%
- Controller module size	140 x 175 mm (W x L)
- Cabinet with power supply size	350 x 304 x 91 (L x W x H)
Communication ports	
Direct PC connection	- TCP
Extension modules connection	- RS485 (dedicated port)
Readers & cards	
- readers ports	1 port in elevator mode - Wiegand interface
- card formats	26 /34 bit Wiegand, self-defined
- card types	Compatible with reader technology
- keypad formats on readers	4-bits, without buffering
Inputs	
- door contact input, not used in elevator mode	NO / NC - 4 inputs
- emergency floor unlock (EMER) - exit button input, not used in elevator mode	NO / NC - 1 input NO / NC - 3 inputs
- general inputs, not used in elevator mode	NO / NC - 4 inputs
- general inputs - on extension module, not used in elevator mode	NO / NC - 4 inputs (option)
Outputs	
- 5 outputs - floors 1 to 5	Relay DC 12V 3A
- 4 outputs - floors 6 to 9 (KDH-MOD3004-ELV)	Relay DC 12V 3A
- up to 64 outputs - floors 6 to 69 (KDH-MOD3016-ELV)	Relay DC 12V 3A
Access parameters	
- access levels	200
- schedules	200
- holidays (single or multiple-day periods)	80 x 64 days
Identification mode	Card, PIN, Card or PIN, Card + PIN

3. General guidelines for controller installation

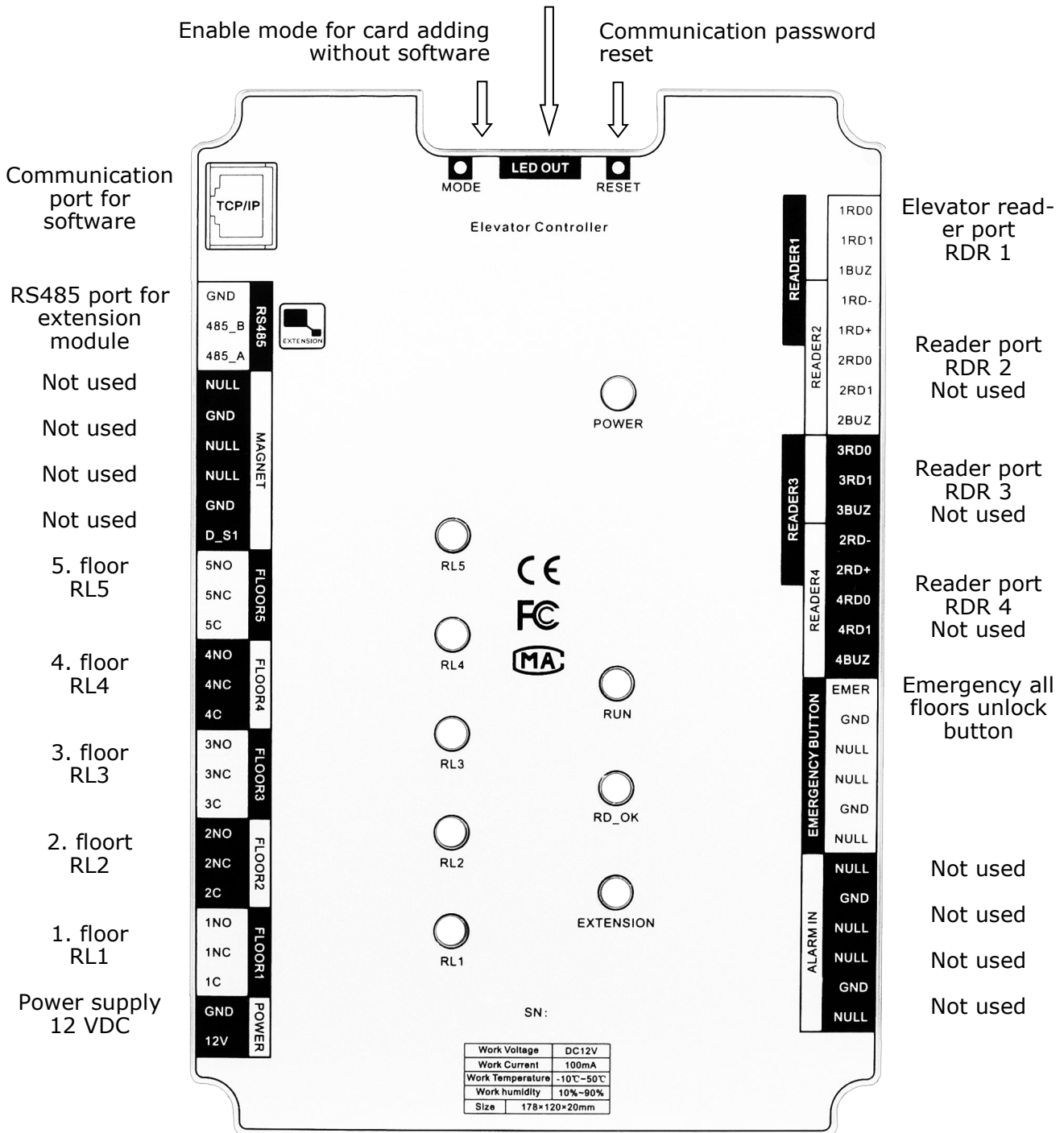
- Before controller installation please read this manual.
- Controller installation can be performed only by qualified personnel with the appropriate certificate, authorizing to install and service such equipment
- Controller should be installed **inside protected area** with temperature above +2°C and normal humidity.
- Controllers should be located so that the minimum distance from the cables and high voltage devices and other devices, that generate electrical noise, was 2 m. The minimum distance from the telephone line should be 1 m, and from transmitting devices 8 m.
- Controller should be powered from dedicated power supply, APSAAT5 type, described in further part of manual
- Wire connections and works with internal controller parts with power on is strictly prohibited, as it may damage the device
- Before connecting controller to power supply, all necessary connections should be made, in accordance with this manual.

Connection wires table

Connection	Wire type	Distance
Ethernet switch (or router) > IP controller	UTP-5 twisted-pair wire with RJ45 connectors	Up to 50 m (recommended) (max. 100m)
KDH-MOD3004/3016-ELV module > Controller (located out of controller enclosure)	2 pairs of UTP-5 twisted-pair wire	Up to 800m (recommended) (max. 1200m)
Reader > Controller	6-core LIYCY 6x0,75 or UTP-5 twisted-pair wire	Up to 60m max.
Mains power supply 230VAC	3-core cable (3x1.5)	-

4. KDH-KS3000-IP-ELV controller module

Control output for additional indicators
LED: POWER & RUN on enclosure cover (option)



Controller operating indicator



Card reading indicator



RS485 communication state indicator

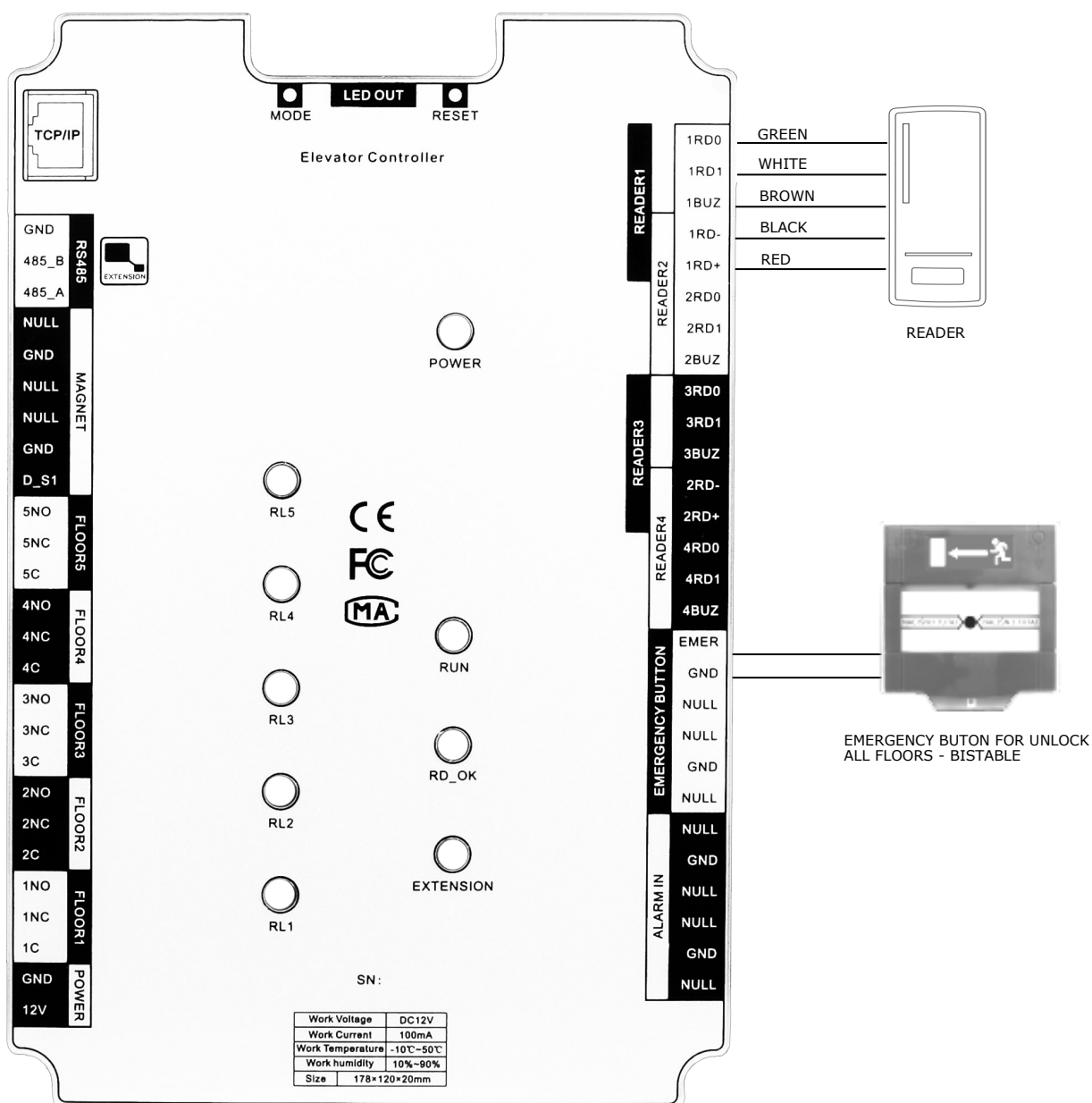


Relay X switch indicator



+12 VDC power supply indicator

5. Reader and floors unlock button connection



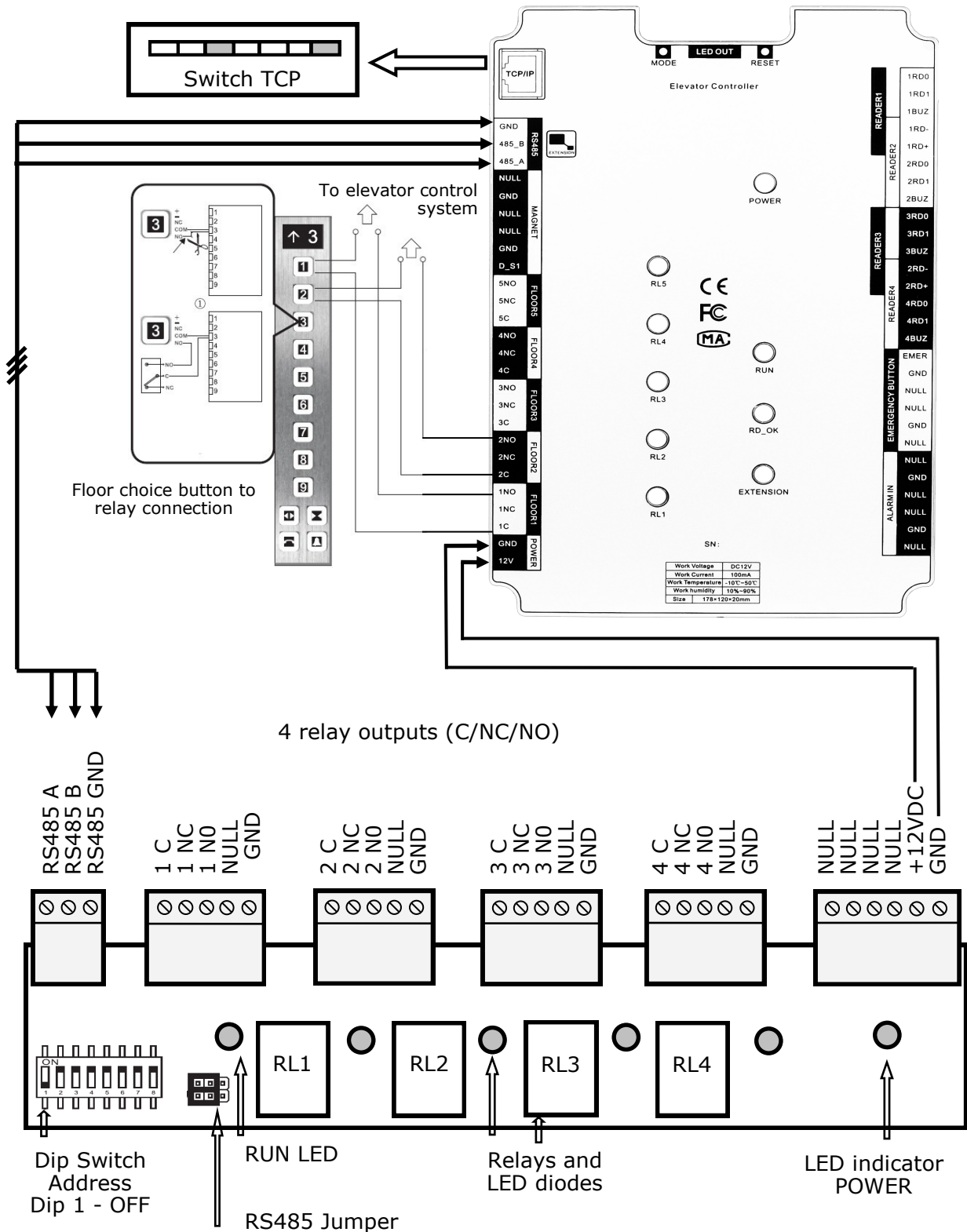
Function	Color	Czytnik 1	Czytnik 2	Czytnik 3	Czytnik 4
Power supply -	Black	1RD-	Not used	Not used	Not used
Power supply +	Red	1RD+			
Wiegand D0	Green	1RD0			
Wiegand D1	White	1RD1			
LED	Brown	1LED			
BUZ	Yellow	OUT BUZ1 MOD			

Notes: Connection between reader and controller: LIYCY type 6-core wire 6x0,75 (shielded) or twisted-pair UTP-5 (8-core)

Distance : between reader and controller ≤ 60m

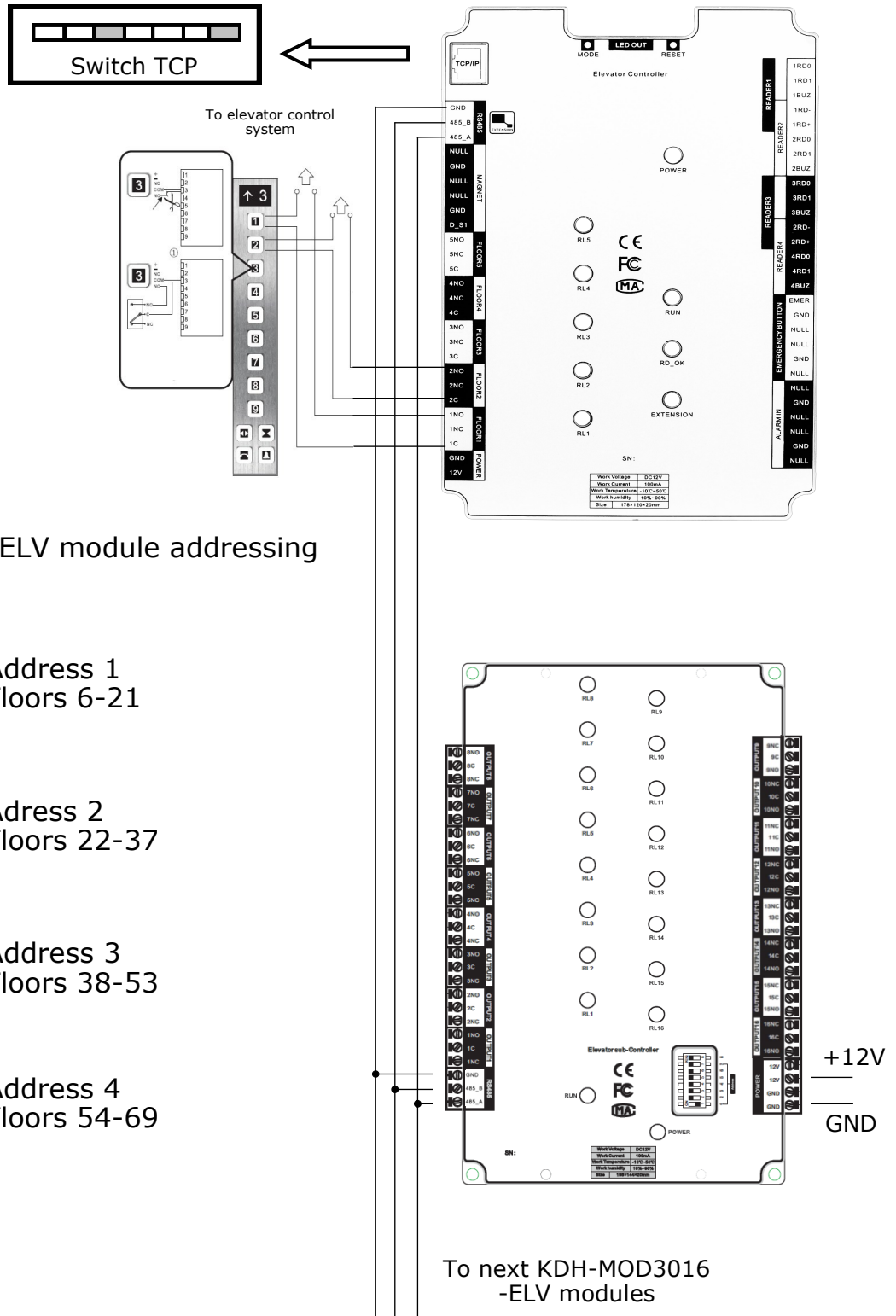
Format: Wiegand format for reader, set in the software, needs to match reader's output format. Indicator of communication with reader: when user presents card to the reader, LED (RD_OK) on the controller module lights up—only, when connection with reader is correct and controller port works correctly. Otherwise, LED will not light up.

6. Power supply, lock, Ethernet, door sensor and I/O module connection

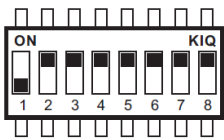


Extension module - KDH-MOD3004-ELV

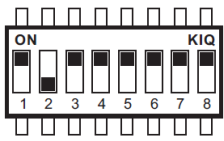
Notes: Address dipswitches should be left at default settings (all ON).



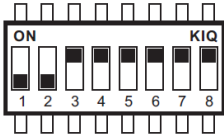
KDH-MOD3016-ELV module addressing



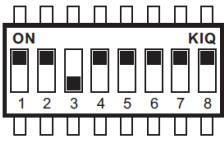
Address 1
Floors 6-21



Address 2
Floors 22-37



Address 3
Floors 38-53



Address 4
Floors 54-69

Extention module - KDH-MOD3016-ELV

Notes: Microswitches should be set according to scheme above to enable access control to respective floors. You can connect up to 4 modules making RS-485 bus. Do not branch the bus. Do not repeat addresses of modules connected to the same bus. Do not mix module types within one bus (see p. 3). KDH-MOD3016-ELV can be mounted in **AWO686 housing**.

7. APSAAT5 power supply for KDH-KS3000-IP-ELV controller

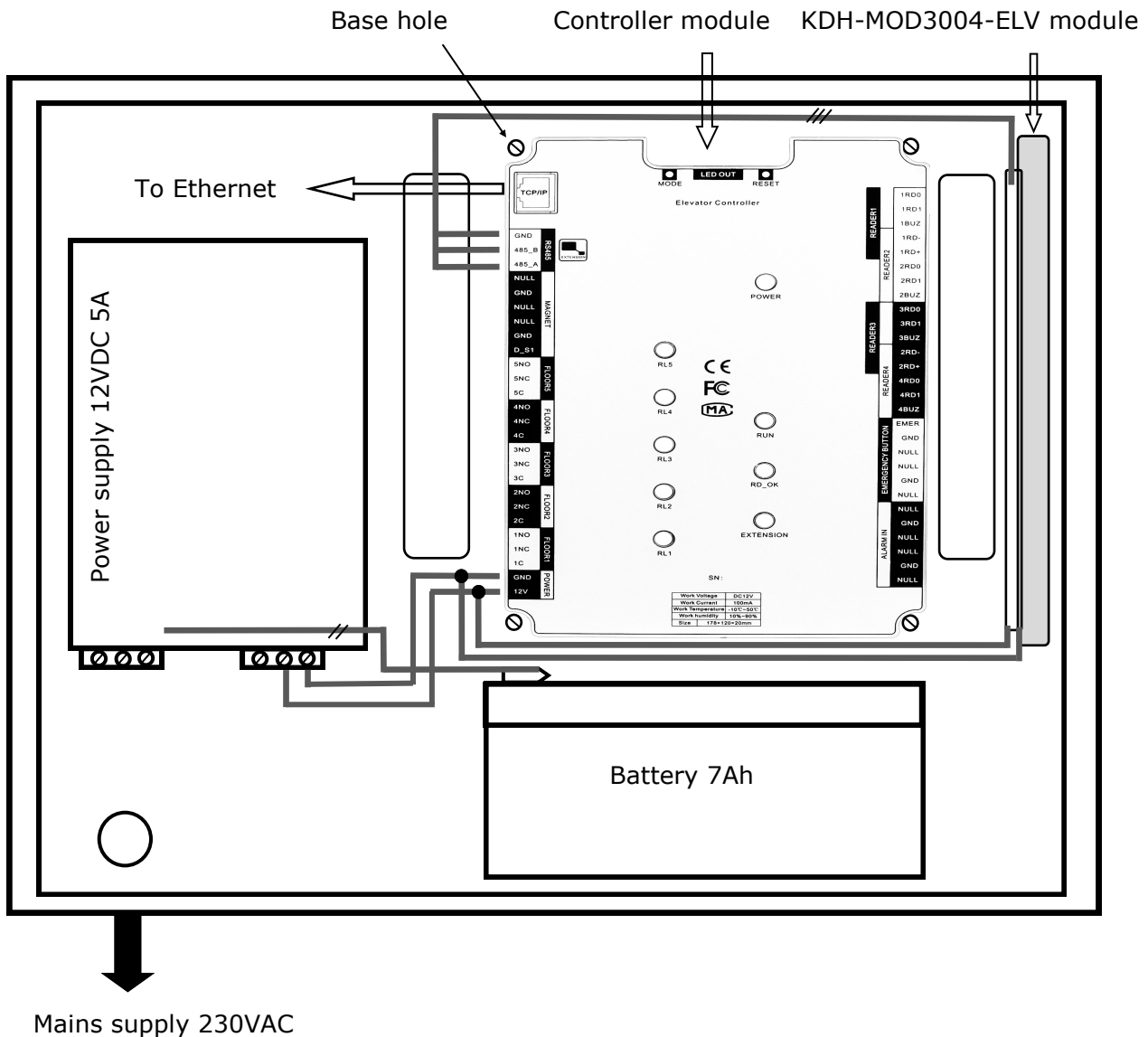


Diagram above shows only connections, which should be made inside the enclosure, between power supply module, controller module, 4 relays module and the battery.

Detailed information about all parameters and terminals in APSAAT5 power supply are specified in the operating manual of the power supply on the website:
<http://www.aat.pl/pl/products/3782/APSAAT5>

8. Controller module installation and connections in housing

Controller and extension module (option) should be installed in a dedicated buffer power supply housing. Dedicated housing APSAAT5 is recommended. Before installing controller module, 4 metal spacer bars (included) should be installed in bottom holes. Since controller modules have different sizes, number of holes are made at the bottom of housing. The base point for all models, which can be installed in this enclosure, is the hole located in upper left corner of controller module installation space (location is shown on previous page). The buffer power supply, mounted in this housing, has capacity of 3,5 A. Housing is adapted to internal installation of 7Ah battery.

NOTE: If it's necessary to provide longer operation time for controller, separate supply power with 18Ah rechargeable battery should be connected to the battery cables derived from APSAAT5. To avoid the reverse charge current please install diode in series circuit. The manufacturer strongly discourages direct connection to the power supply in APSAAT5 battery with a larger capacity than 7Ah because it requires a larger charging current.

After installing module in the enclosure with screw kit, following connections should be made (shown on previous page):

- connect supply voltage output (AUX 1 12VDC) with controller terminals
- additional terminals on controller module supply socket can be connected to I/O module, according to figure on previous page.
- connect controller RS485 port, using 3-core signal wire, with corresponding port on I/O module, according to figure and terminals description on page 8
- install battery at the bottom of housing and connect dedicated wires (red (+) and black (-), coming from the left side of power supply module).
- connect reader and button wires to terminals on controller edges
- connect cable with RJ45 connector to Ethernet socket, located in the upper left corner of the controller module. Other end of the cable should be connected to Ethernet network.
- connect mains power supply 230 VAC to electrical terminal block in the bottom part of housing (through existing fuse), in accordance with colors of wires, coming from the terminal block to the power supply

After finishing all connections, once again check, if they are all correct and only after this turn on the mains voltage 230 V and check if controller is working properly.

After turning on mains voltage, observe LED indicators on power supply module, controller and I/O module. 12V voltage presence indicators should first light up on power supply module, and then on controller (POWER LED) and I/O module. Next, RUN diode on controller module and I/O module should start blinking. Thereafter, LEDs on readers should light up.

Housing is equipped with dismantled door, which can be disassembled for connecting wires, after disconnecting grounding wire. Housing can be closed with two screws, fastened on the right.

9. Adding cards to controller memory without software

3000 series controllers have ability to add cards to the controller database, using connected standard reader, without connecting with management software.

It's very useful function on system commissioning and testing stage, because it allows fast and simple adding of cards with privileges. Using this method, up to 3000 cards can be added, all with administrator rights and working in 7/24h mode. After communicating controller with the software, at a further stage of installation, it is possible to remotely delete these cards, but they are not overwritten by cards added with the software. If we want to have uniform card database in entire system, obviously cards added with this method should be deleted and card database should be sent from the management software on PC. Function of adding cards with this method is enabled as default, but it can be disabled after connecting controller with the software. Adding cards using reader affects only database of controller, to which reader used for reading cards is connected. If system consists of more controllers, this procedure should be repeated individually for each controller.

Procedure for creating programming card:

1. Push the button *Mode*, located on the upper edge of controller and hold it for 3 seconds. Read any card in the reader - it will be programming card. To exit programming mode, push the button twice and wait for 30 seconds.

Procedure for adding cards to the controller memory:

1. Read programming card in the reader once. Entering to programming mode is indicated by blinking LED on the reader alternately, in red and green.
2. Read card, which should be added. LED on the reader will flash in red for 1,2 seconds. It indicates adding card. Read further cards, which should be added.
1. In order to finish procedure of adding cards read the programming card again or wait for 12 seconds.

Procedure for deleting cards from controller memory:

1. Read the programming card in the reader twice. Entering to programming mode is indicated by LED on the reader flashing green.
2. Read the card, which should be deleted. LED on the reader will flash in red for 1, 2 seconds. It indicates deleting card. Read further cards, which should be deleted.
3. In order to finish procedure of adding cards read the programming card again or wait for 12 seconds.

Procedure for deleting all cards from controller memory:

1. Read the programming card in the reader three times. Entering to programming mode is indicated by LED on the reader flashing green.
2. After 4 seconds read programming card again. All cards are deleted and reader will leave the programming mode.

**THE PRODUCT MEETS THE REQUIREMENTS
CONTAINED IN THE FOLLOWING DIRECTIVES:**



DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79–106, with changes)



DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38–71, with changes)



DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (OJ L 174, 1.7.2011, p. 88–110, with changes)

 **KaDe**



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