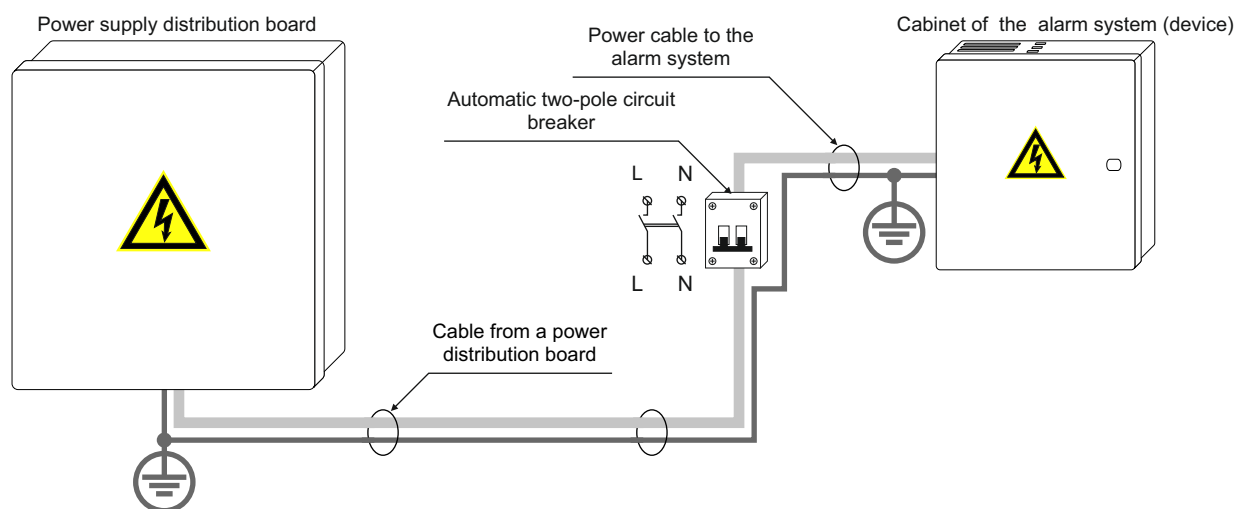


SAFETY WARNINGS

- ⚠ The device must be installed in a place with limited access.
- ⚠ The device must be connected to AC power supply with Protective Earthing. Cable colors and purpose: Phase or Live line (L) - black or brown cable, Neutral line (N) - blue cable, Protective Earth line (PE) - green cable with a vertical yellow stripe. Only double isolated cables with a cross-sectional area of no less than 0,75 mm² shall be used for 230V power supply.
- The device uses two power supplies: main and back-up.
- Main power supply: a power transformer with:
 - primary winding: ~230V, 50 Hz;
 - secondary winding: ~20V, 1.5A, 50Hz.
- Back-up power supply: 12V, 7Ah/20HR capacity, rechargeable hermetically sealed Lead-Acid battery.
- SECOLINK intruder alarm system is compliant with EN 60950-1 safety requirements.
- Power supplies described above must comply with the EN 60950-1 safety requirements.
- ⚠ All devices connected to the intruder alarm system (sirens, detectors, computer for programming, and etc.) must comply with EN 60950-1 safety requirements.
- ⚠ Additional **automatic Two-Pole Circuit Breaker** should be installed in AC electric power circuit in order to protect against over-current, short circuits, and earthing faults.
- ⚠ The circuit breaker contact gap should be no less than 3mm, protective circuit breaker current must be in a 0,5A - 2A range .
- The circuit breaker should be placed close to the system's housing and should be easily accessed.



Picture 1. Automatic two-pole circuit breaker and power cable wiring diagram

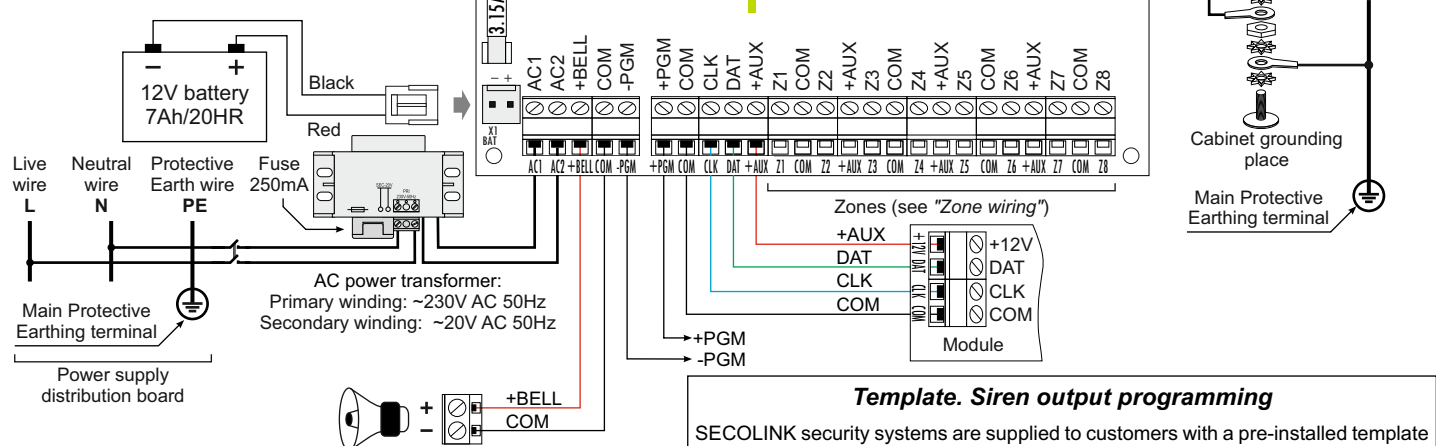
- ⚠ Device installation and service should be performed by trained personnel with sufficient knowledge about the device and general safety requirements for work with low voltage (up to 1000V) AC power lines. In case of a device malfunction, repair works can only be performed by qualified personnel. If the system is malfunctioning, the end user should inform qualified personnel as soon as possible. User doesn't have the right to repair the system.
- Before performing any work of installation or service **always** disconnect the device from power supplies in sequence as described below:
 - cut off the 230 VAC power line by turning off the automatic Two-pole Circuit Breaker;
 - disconnect the 12V back-up battery by removing the female battery plug from control panel's male socket BAT.
- Two-pole Circuit-Breaker installation on flexible cables is forbidden.
- ⚠ Alarm system modules comes with a built-in LED indicator. LED blinks when the module is powered up. Press any key on the keypad to check if the system is powered up or not. If system was powered up, the keypad backlight will last for 30 seconds.
- General safety requirements:
 - do not touch any part of the main power supply under voltage such as a transformer, a fuse block, or connection wires;
 - it is forbidden to perform any device installation or service work during lightning;
 - use batteries as per manufacturer's recommendations. The use of improper battery type may cause an explosion;
 - battery replacement : make sure that battery terminals are isolated; battery terminals short-wiring may cause an explosion.
- ⚠ It is not recommended to connect the device to a fully discharged battery. To avoid system malfunction use an adequate charger to charge a new or discharged battery before connecting it to the device.
- ⚠ Inoperative or expired batteries should be recycled according to the local rules or EU directives 2006/66/EC and 93/86/EEC. Collection and separate utilization of waste battery is mandatory!
- The connection to the main supply must be made as per local authority rules and regulations.
- ⚠ The end of a stranded conductor shall not be consolidated by soft-soldering and insulated pins should be used instead. Insulated pins need to be connected in a proper manner to remain mechanically efficient.
- ⚠ The Control Panel Terminals TIP, RING, T-1 and R-1 should be connected to analog PSTN line. Connection to digital ISDN line may cause device damage.
- ⚠ LAN800 is designed to be used together with a router which is placed in the same room or premises. It's prohibited to connect LAN800 directly to Wide Area Network (MAN, WAN) or building IT infrastructure cables.
- ⚠ Please act according to your local rules and do not dispose of your unusable alarm system or its components with other household waste. This product utilization in EU is covered by European Directive 2002/96/EC.

General information

Third generation control panels PAS816 and PAS832 perform all necessary functions to protect apartments, offices, homes, or villas. It includes all previous features as well as new improvements such as a reliable pulse-type power supply with measurement, powerful siren control, failing battery disconnection, and voice-guided system control via PSTN line. It is designed to be operated by keypads connected with a four-wire cable and is capable of being programmed by means of computer and software MASCAD in MS Window environment. More information can be found at intruder alarm systems manufacturer's, Kodinis Raktas UAB, website <http://www.secolink.eu/en/products/control-panels>.

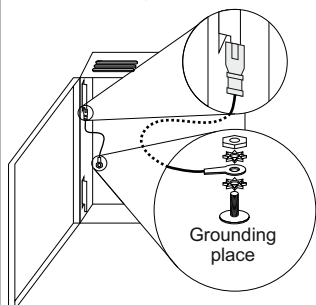
Installation of control panel

For correct operation control panels need one 12V 7Ah rechargeable battery. The battery is used as a back-up power supply in case of a temporary AC loss. This battery is also used when an alarm system consumes more power than control panel can supply. Excessive consumption may happen when the system activates a siren or a radio transmitter. Usually activation lasts only a few minutes to not discharge the battery.



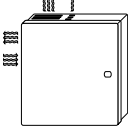
Picture 2. Wiring of the power supply, PSTN line and a siren without the battery

Grounding cabinet door



Use a cable to connect the cabinet's door to the cabinet's grounding place.

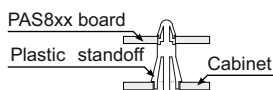
Attention! Do not cover ventilation holes of the cabinet!



Leave minimum 10 cm of free space between the ventilation hole and any other surface. Increase in temperature of control panel can reduce the maximum current on +AUX and +PGM.

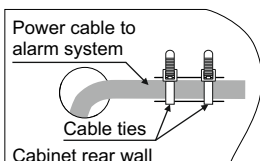
Mounting modules in the cabinet

Insert standoff into cabinet's mounting hole in the desired location and snap in place. Position circuit board mounting holes over standoffs. Press firmly on board to snap in place.



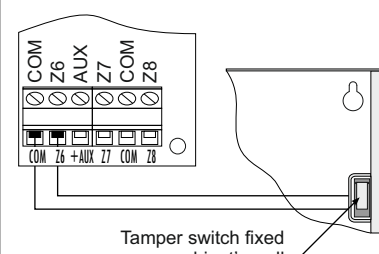
Securing power cable to the cabinet

Use cable ties to secure the power cable to a cabinet wall.



Use a tamper switch to protect control panel

By default control panel zone Z6 is set for detection of alarm system's cabinet opening. Opening the cabinet when the system is disarmed will create a trouble event or will trigger an alarm if the system is armed. When cabinet's tamper is unused, input Z6 can be set as a normal zone. Tamper disabling sequence is described in the picture below on the right.



Service Mode	1	System Setup	...
System Setup	1	Modules	...
Modules	1	Module settings	...
M00 Control panel	5	Use module tamper	No

Template. Siren output programming

SECOLINK security systems are supplied to customers with a pre-installed template in the keypad memory. The template is a set of most frequently used system settings. During *First start* procedure keypad sends these settings to other modules. When *First start* is completed the system will be set to 1 partition and 8 zones:

- Z1 is preset to be used with an entry door magnetic contact;
- Z2 - with PIR motion detector in entry/exit path;
- Z3, Z4 - for PIR detectors wiring;
- Z5 - with a smoke detector;
- Z6 - for cabinet tamper switch wiring;

PGM outputs:

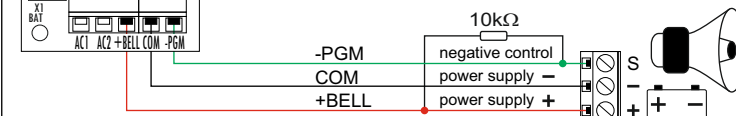
- +BELL (O01) is preset in the template to control a siren with no battery;
- -PGM (O02) is preset to make an activation (makes "minus") of a siren with a back-up battery;
- +PGM (O03) is preset to make +12V power supply for smoke detectors. See page 6 - *Wiring of 4-wire smoke detector*.

SECOLINK security systems may have different templates for different countries. Check keypad's sticker for a country prefix or the pre-installed template code. Example: KM24_MY

Note: in most templates +BELL is set for sirens with no battery (picture 2). To use the siren with a back-up battery (picture 3) you need to change +BELL (O01) definition to *Power supply*. Definition changing sequence is shown on the right.

Service Mode	1	System Setup	...
System Setup	...	4	PGM outputs
O01 Power supply			
3	Definition	Power Supply	

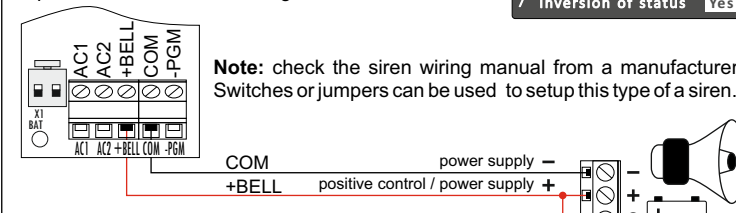
If a direct connection between the control panel's -PGM output and siren's triggering input S does not ensure a stable siren activation, please connect the pull-up resistor (3-15 kOhm) between the +BELL and -PGM as shown in the picture below.



Picture 3. Installation of a siren with a back-up battery using 3 wires

Note: If an installation of a siren with back-up battery is done using 2 wires (picture 4), then an installer needs to make changes as shown to the right. This type of a siren uses a back-up battery to sound an alarm when power supply line (+BELL) does not provide power from the control panel. Use *Inversion of status* PGM attribute to program the system for this operation. Programming sequence is described on the right.

Service Mode	1	System Setup	...
System Setup	...	4	PGM outputs
O01 Power supply			
7	Inversion of status	Yes	



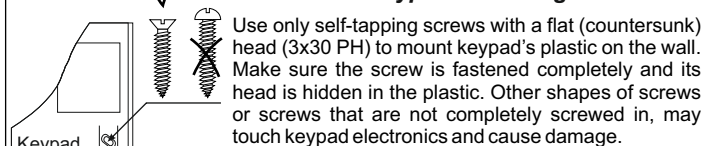
Picture 4. Installation of a siren with a back-up battery using 2 wires

Electrical characteristics and additional information

Maximum load ratings and electrical characteristics of PAS8xx control panels

Maximum long term output current of control panel: ($I_{+AUX} + I_{+BELL} + I_{+PGM} + I_{BAT.CHARGE} \leq I_{LONG TERM}$)	1,5A
Maximum current out of +AUX:	+0,9 A
Maximum current out of +BELL:	+2,0 A
Maximum current into -PGM:	-0,05 A
Maximum current out of +PGM:	+0,9 A
Maximum battery charging current:	+0,4 A
Low battery voltage threshold:	10,5 V
Control panel disconnect battery when its voltage is less than:	9,5 V
Minimum AC voltage on AC1-AC2: Note: with ~16 V on AC1-AC2 max DC current generated by control panel power supply is 0,7A.	~16 V
Maximum AC voltage on AC1-AC2: Note: higher than ~22 V voltage can damage the control panel.	~22 V
Maximum voltage on +AUX, +BELL, +PGM outputs:	+13,9 V
Minimum voltage on +AUX, +BELL, +PGM outputs:	+12,0 V
Maximum current of a fast blowing fuse used in battery circuit:	3,15 A
Maximum current of a slow blowing fuse used in primary AC:	250 mA
Maximum AC power consumption	150 mA

Keypad mounting



Operating temperature

Operating temperature range:	-10°C to +55°C
Calculated life expectancy at 40°C ambient temperature: • for PAS816, PAS832 control panels:	12 years
Note: ambient temperature over 40°C may reduce life expectancy.	
Note: poor ventilation of the cabinet increases ambient temperature.	

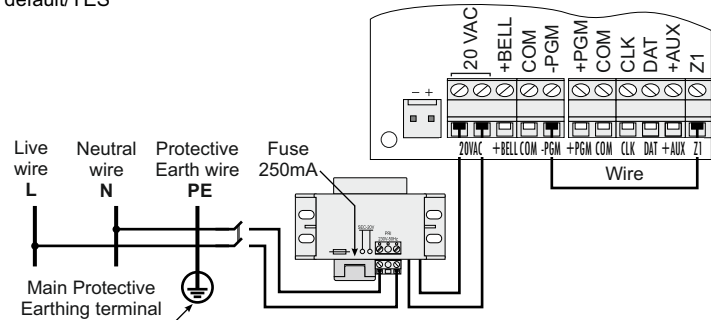
Restoring service PIN to default value

To restore default value (0000) for service PIN, follow these steps:

- disconnect control panel from 20 V AC power supply;
- disconnect control panel from back-up battery;
- make a short circuit of the -PGM and zone Z1
- connect control panel to 20 V AC power supply.

Service mode is now enabled and service PIN is restored to 0000. To reset user PIN follow the steps:

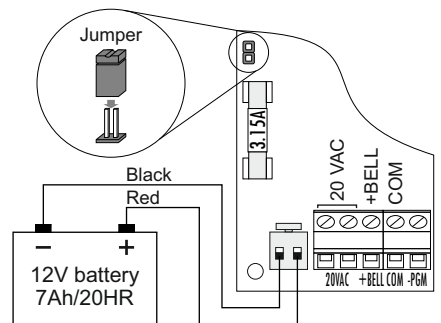
- do not block service by pressing ENT;
- press arrow key to navigate in the menu;
- go to: Main Menu/Settings/Users/Edit Users/ enter **0000/Reset PIN** to default/YES



System start-up with no 230V AC power

Connect 12V battery to control panel by using a BAT connector.

Use a jumper to close the shown pins for 1 second. The system will start to operate, however, AC loss trouble will be indicated.



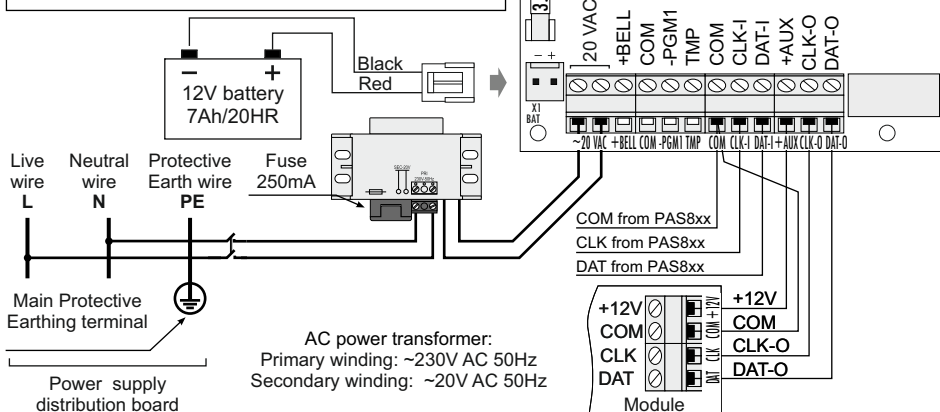
Non-volatile memory

Control panel has non-volatile memory to store all parameters, event log and the last control panel status. System status will return to the same status that was recorded before the power supply was disconnected.

Wiring of modules in large or high security level system

Maximum load ratings and electrical characteristics of PWR20

Maximum long term current out of PWR20: ($I_{+AUX} + I_{+BELL} + I_{BAT.CHARGE} \leq 2 A$)	2,0A
Maximum current out of +AUX:	+1A
Maximum current out of +BELL:	+2A
Maximum current into -PGM1:	-0,05A
Maximum battery charging current:	0,35A
Module disconnect battery when its voltage is less than:	9,5V



Outdoor siren's safe wiring

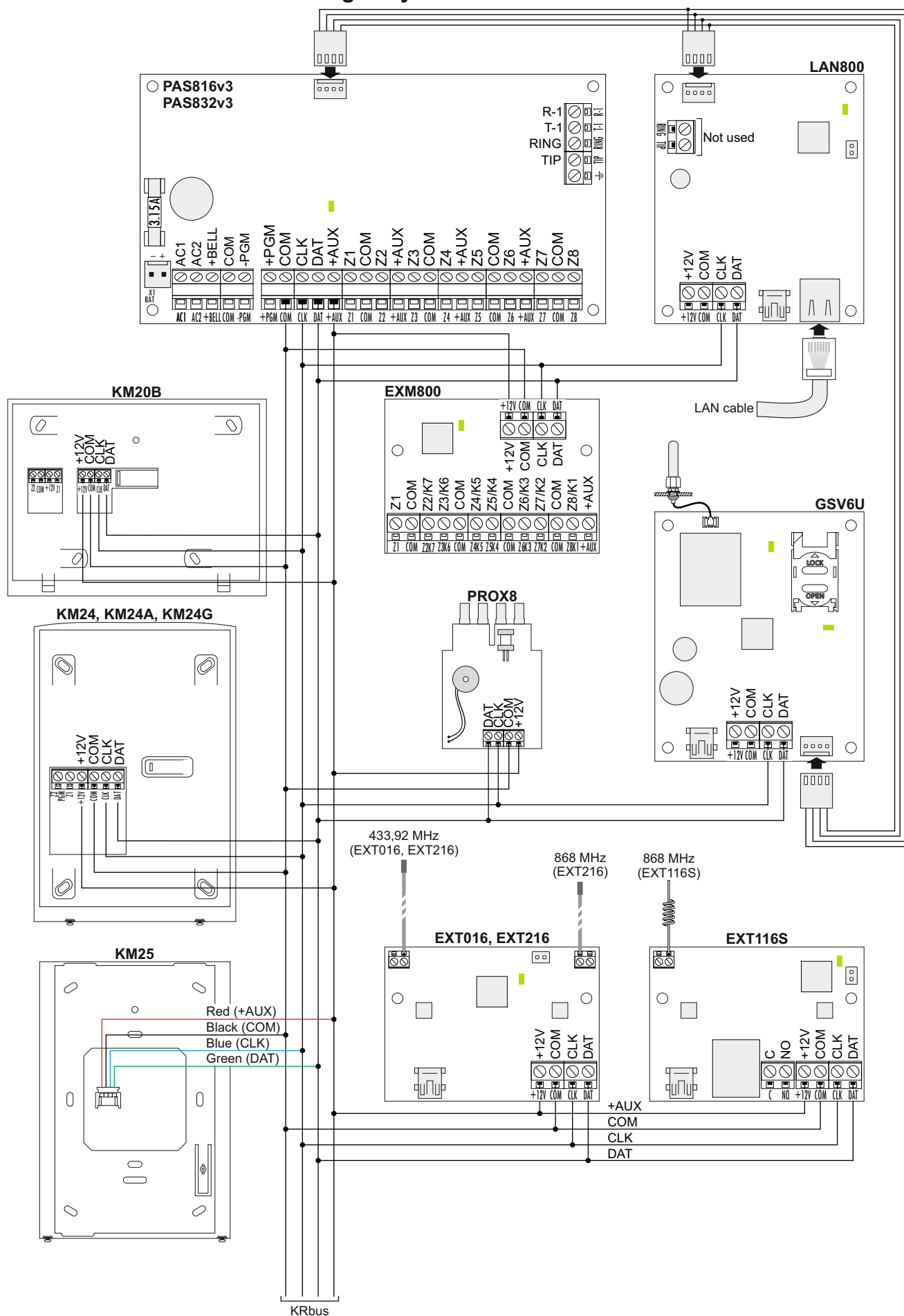
Use a transformer, other than a control panel, and a rechargeable 12V 7Ah battery to power up PWR20. If an alarm system includes PWR20, it is recommended to wire an outdoor siren to the PWR20 terminals +BELL, -PGM1, and COM same as shown on page 2. Failure of siren's internal battery or the siren itself will not affect the performance of an alarm system.

PWR20 – power supply module with a bus supervision

It is recommended to wire all outside proximity readers or keypads to the CLK-O and DAT-O. An attempt to make a short circuit on the outside module will make no affect to system's performance. PWR20 will detect the short circuit on bus and will disconnect it from the main bus. Terminals CLK-I and DAT-I are inputs for the main bus, terminals CLK-O and DAT-O are used for outside modules. To supply power to modules, PWR20 output +AUX must be used.

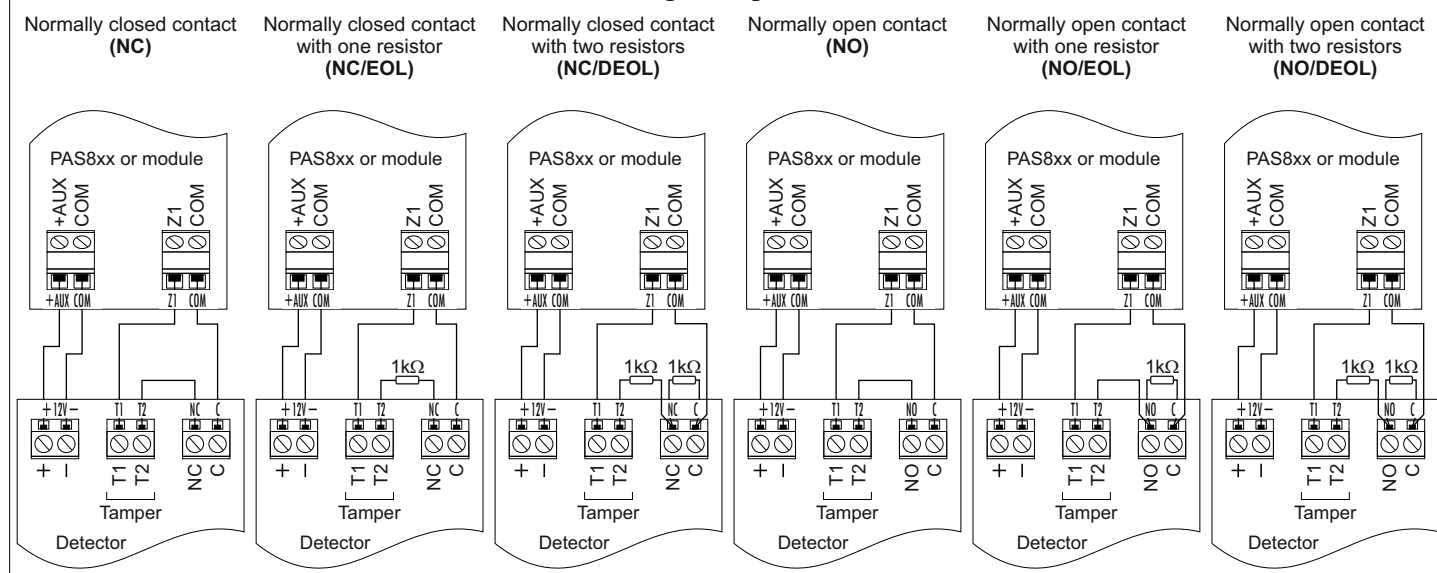
Note: the use of PWR20 does not extend the total bus length.

Wiring of system modules

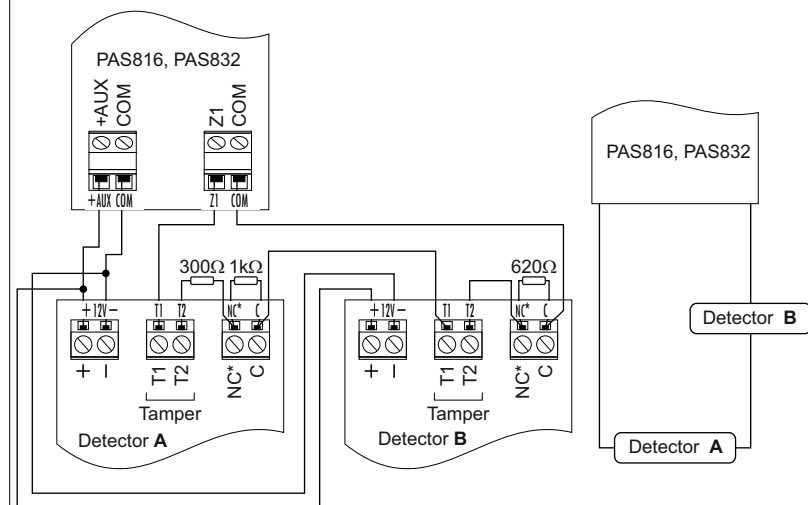


Wiring of zones

Wiring of single zones



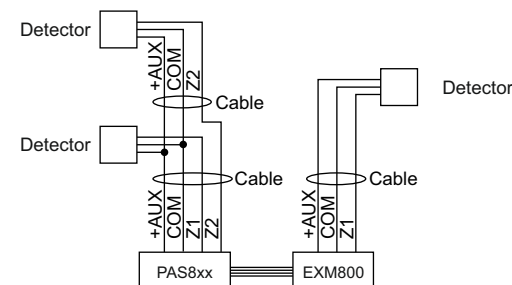
Wiring of double zones



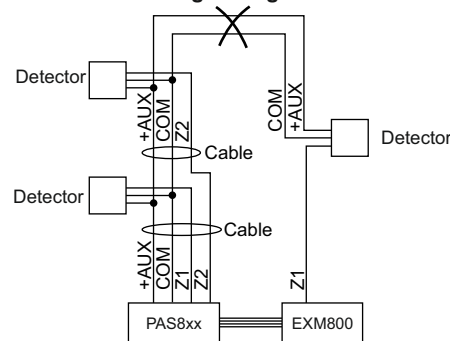
* - Detector contact must be NC or NO.

ATTENTION! Avoid power supply loops

Correct wiring

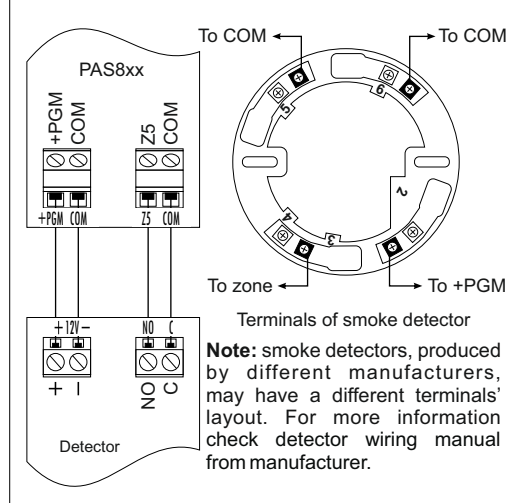


Wrong wiring



Wiring samples

Wiring of a 4-wire smoke detector

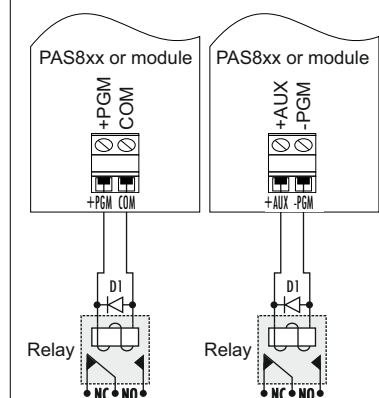


Smoke detectors can be triggered by dust. Therefore, to prevent false alarms, it is recommended to verify the fire alarm. For the verification some system settings must be active. Below is an example for +PGM:

- "Fire verification" attribute must be assigned to a fire zone. (Zone Z5 used in the template as a fire zone);
- fire (smoke) detector must be powered by +PGM;
- "Fire Power Supply" definition must be set for +PGM;
- zone selected to be as a fire zone must be pointed as a trigger source for +PGM;
- +PGM reset time (pulse length in the keypad menu) must be set;
- "Detector settling time" (global time setting) must be set;
- "Fire verification time" (global time setting) must be set;

Operation: In order to check a triggered fire (smoke) detector, detector's power supply has to be turned OFF and turned ON again. The system turns the +PGM off for a PGM reset time. When the reset time expires the system turns ON the +PGM again and waits for the detector to settle ("detector settling time"). Then the system checks a detector again for a period equal to "Fire verification time". If a fire (smoke) detector is triggered again, it means an alarm really occurred.

Wiring of relays



It is recommended to use diode to suppress voltage surges on relay.

Wiring samples (continued)

Maintained Key-switch zone wiring

Wiring:

Programming (using MASCAD):

Momentary Key-switch zone wiring

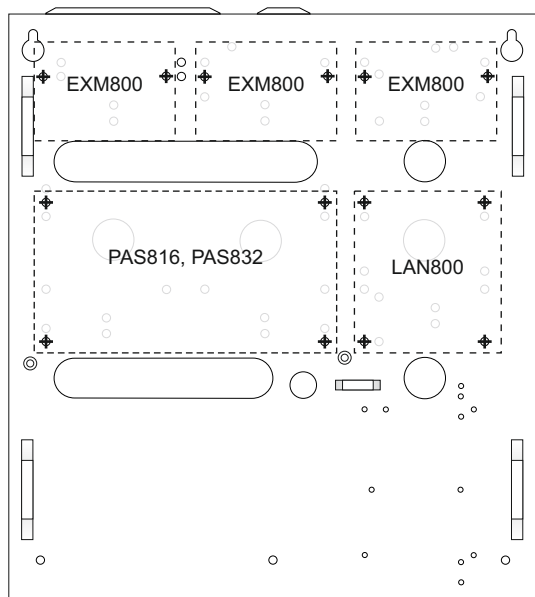
Wiring:

Programming (MASCAD):

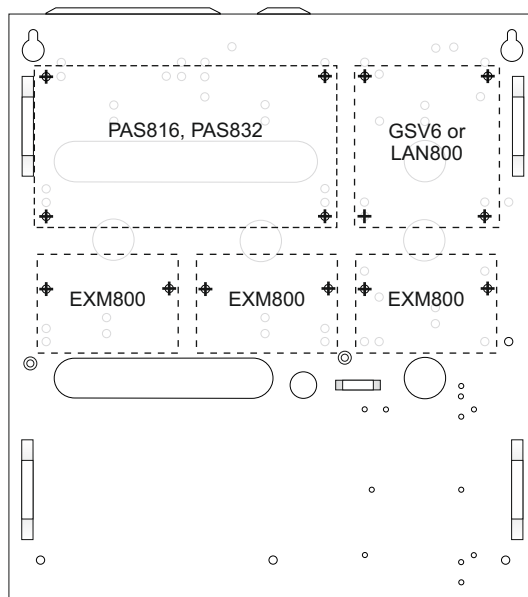
Installation of modules in metal cabinet

Crosses and dashed lines show commonly used locations of the modules. The circuit board mounting holes of wireless zone expanders EXT016, EXT216 or EXT116S matches with mounting holes of EXM800, however, it is recommended to install these modules outside the metal cabinet. Special plastic housing, EXT is designed for these modules.

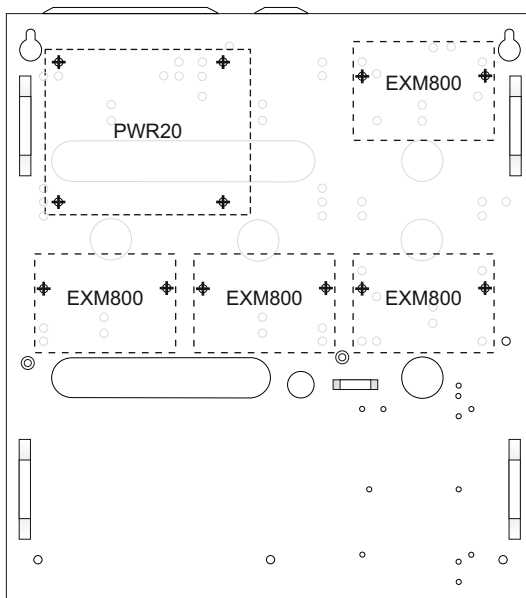
Installation of control panel, zone/PGM expansion, and LAN modules



Installation of control panel, zone/PGM expansion and GSM/GPRS module, or LAN modules

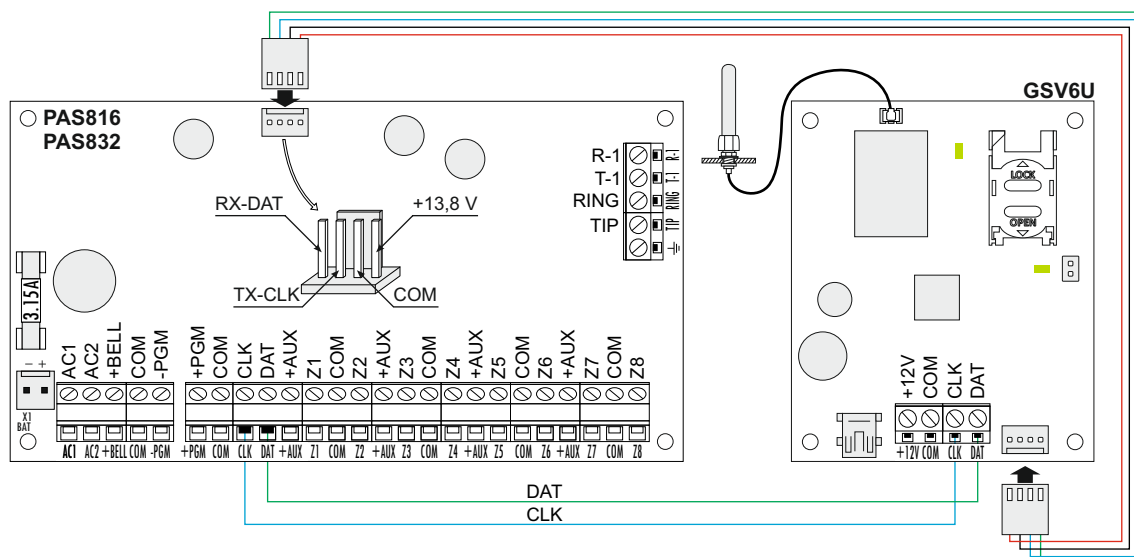


Installation of extra power supply module and zone/PGM expansion modules



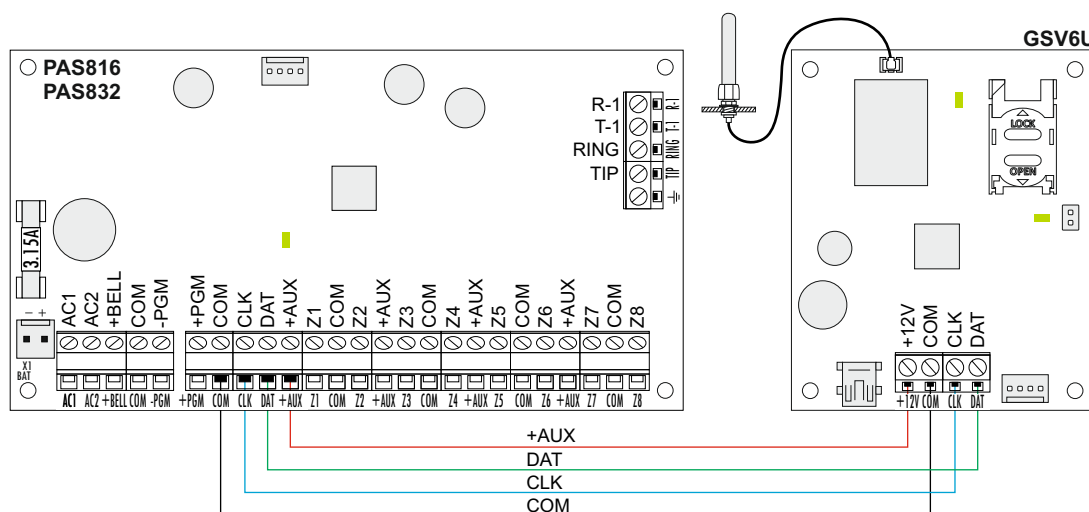
Wiring GSV6U to the control panel

This wiring method ensures, that in case of a short circuit on +AUX and COM, the module will continue working and all reports will be sent to central monitoring station or to the end user. Avoid powering loops. Do not connect +AUX and COM, if module is connected to SERIAL port.

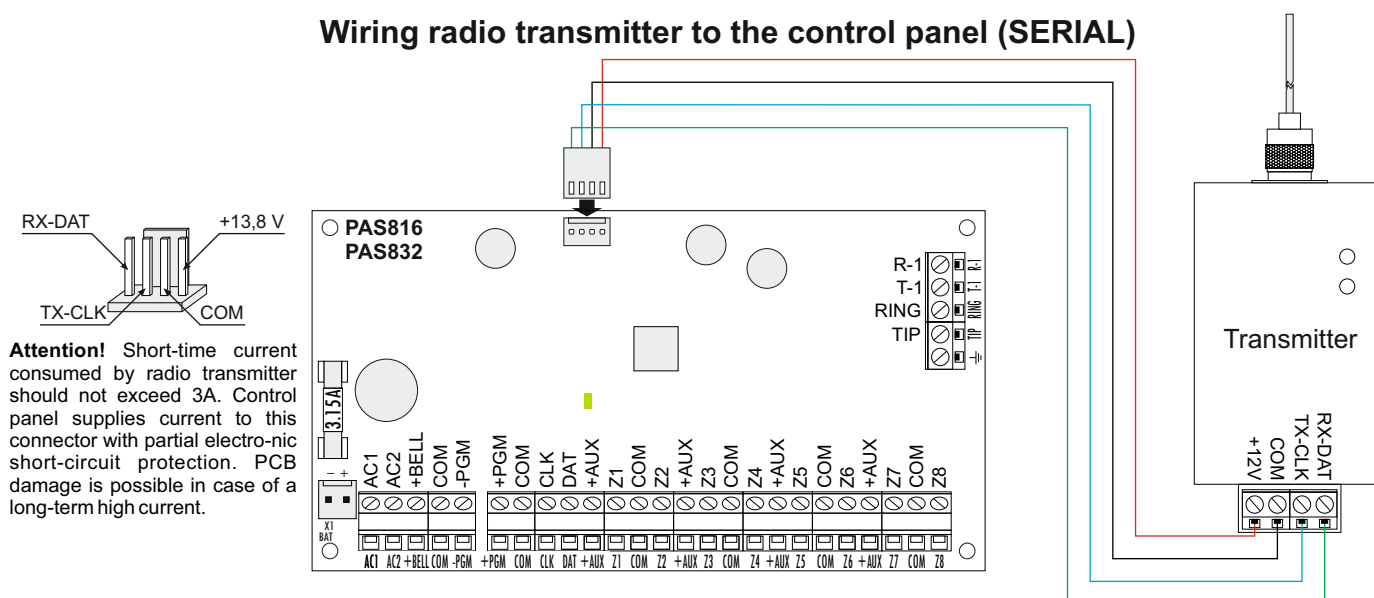


Wiring GSV6U to the control panel (optional)

When alarm system's cabinet is placed in location with poor GSM network coverage, the only option is to install GSV6U module in another place. Pay attention to power supply wires' diameter if distance between the control panel and module exceeds 5 meters.

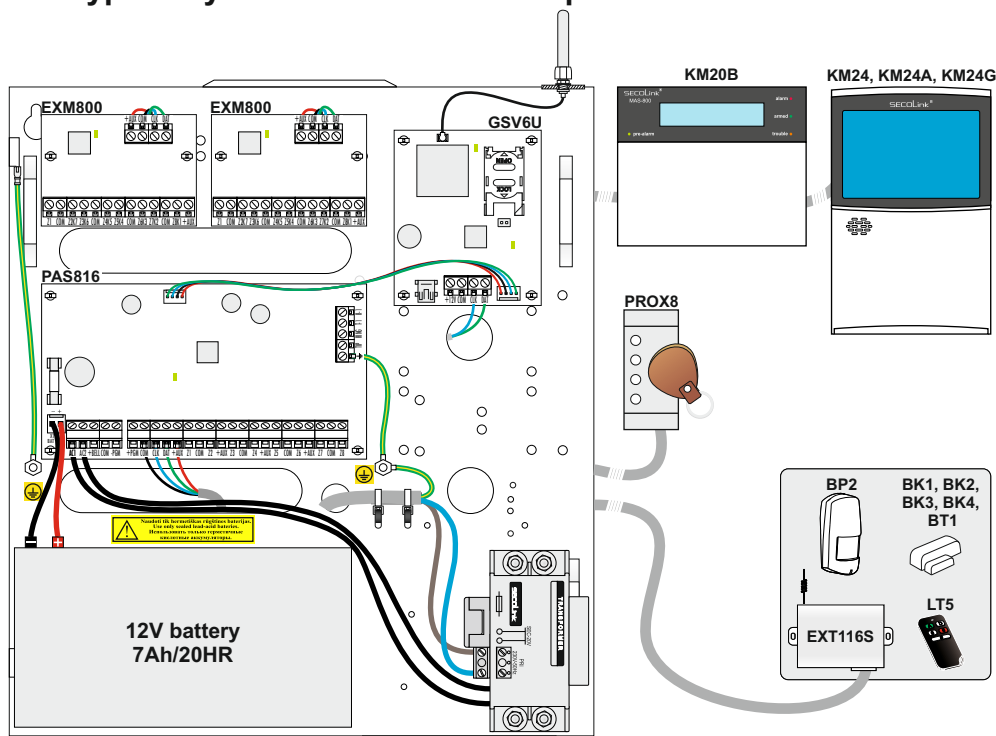


Wiring radio transmitter to the control panel (SERIAL)

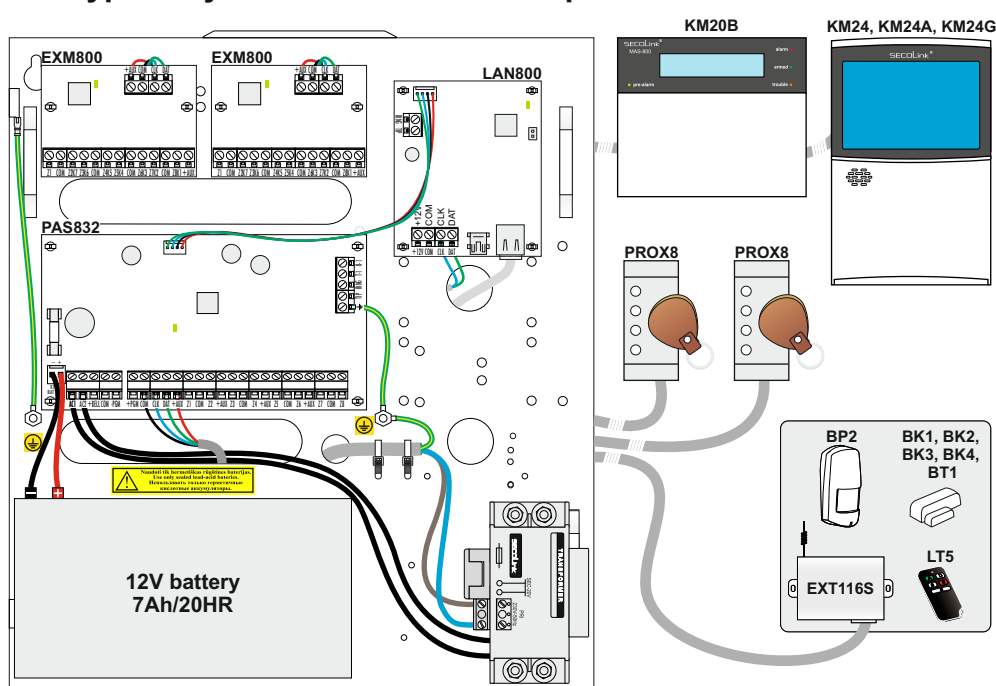


Attention! Short-time current consumed by radio transmitter should not exceed 3A. Control panel supplies current to this connector with partial electro-nic short-circuit protection. PCB damage is possible in case of a long-term high current.

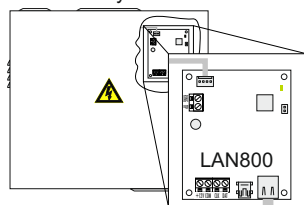
Typical system installation example - SECOLINK PAS816



Typical system installation example - SECOLINK PAS832



Alarm system



Safety warning in case an alarm system uses LAN800 module!

LAN800 is designed to be used with a router which is placed in the same room or premises. It's prohibited to connect LAN800 directly to Wide Area Network (MAN, WAN) or building IT infrastructure cables.



System compliance and warranty



Kodinis Raktas UAB, manufacturer of SECOLINK Intruder Alarm System, offers a Warranty for a term of twenty-four months. It declares, that products PAS816v3 and PAS832v3 comply with essential EU directives and EU standards EN 50131-1, Grade 2, Environmental Class II; EN 50131-3; EN 50131-6; EN 50136-1; EN50136-2; EN50131-10. For more information visit manufacturers website at www.secolink.eu for a complete text of declaration. SECOLINK Intruder Alarm System is designed and manufactured in Lithuania.