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ADAPTIVE SWITCHING SYSTEM OF SOLAR POWER STATION

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Operating principle

The idea is to move away from the classic PWM-controlled power inverter, which uses a pulse transformer or high-speed switches.
By connecting the solar panels in the chain, you can get several buses of constant voltage.
An increase in current is obtained by turning on several solar panel circuits in parallel.
Using a lot of keys with low current and low cost and speed will be economically justified

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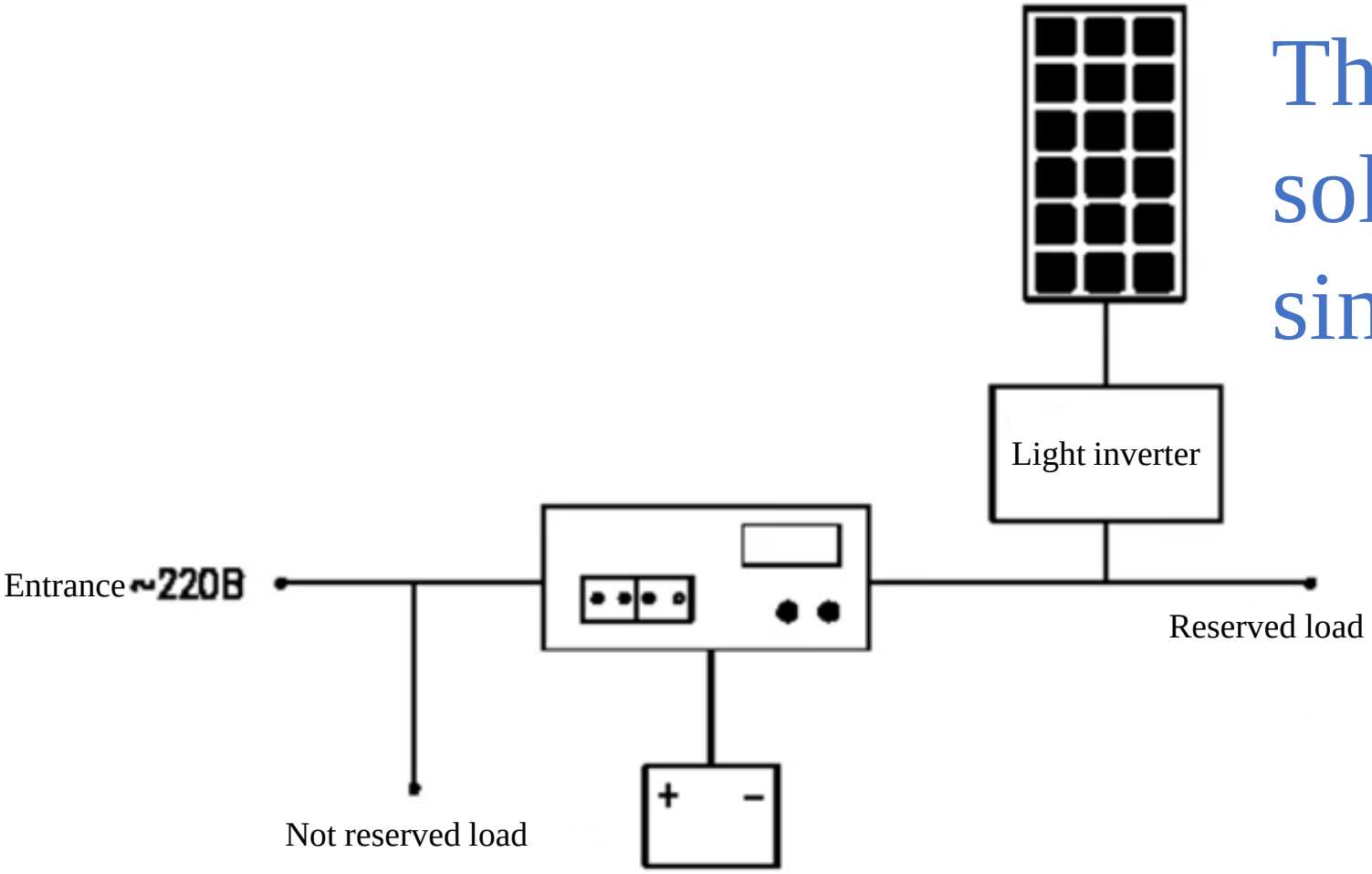
АДАПТИВНАЯ СИСТЕМА КОММУТАЦИИ ПАНЕЛЕЙ СОЛНЕЧНЫХ ЭЛЕКТРОСТАНЦИЙ

The scheme of the solar power plant is single-line



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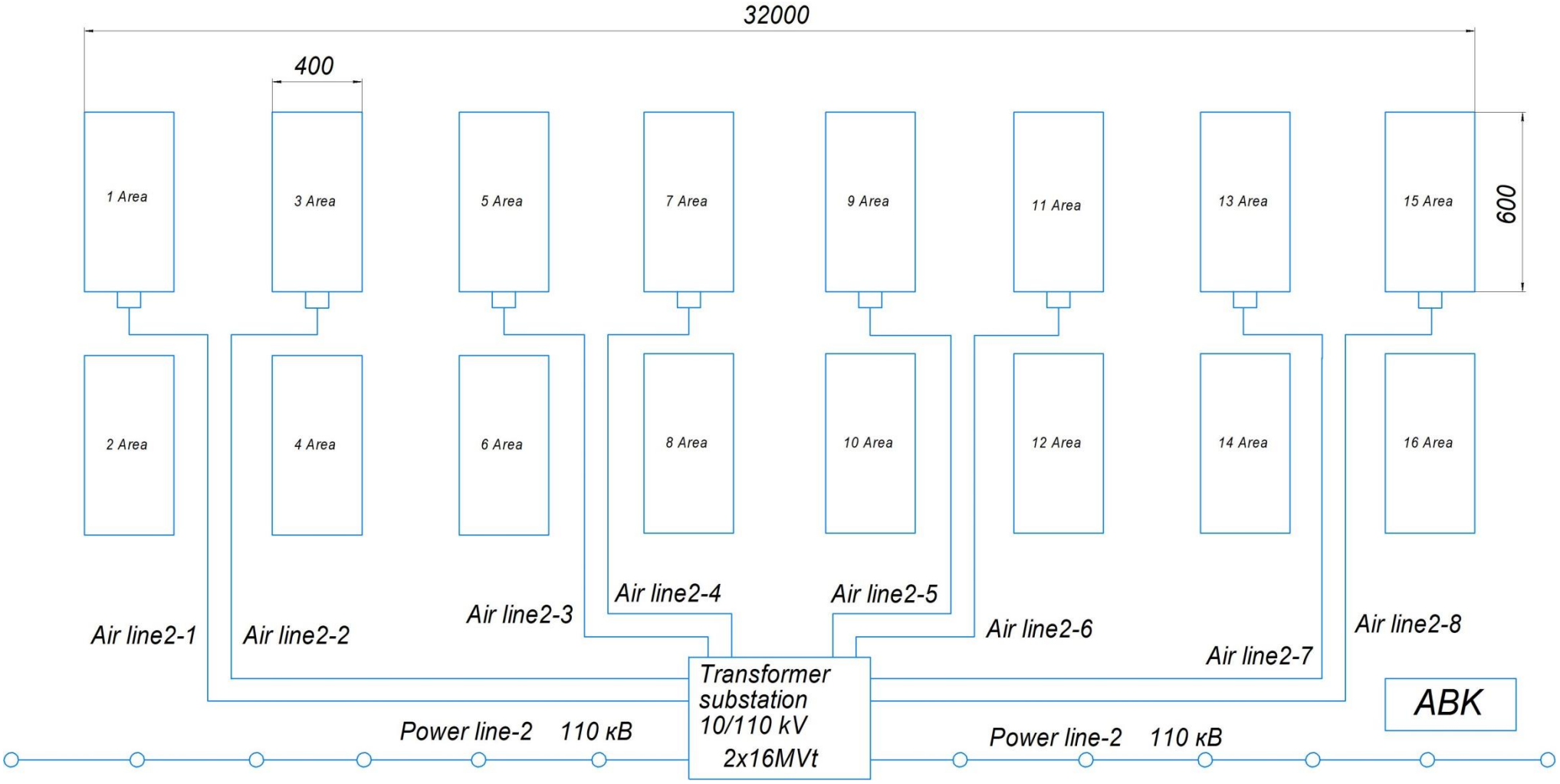
General plan of the solar power plant



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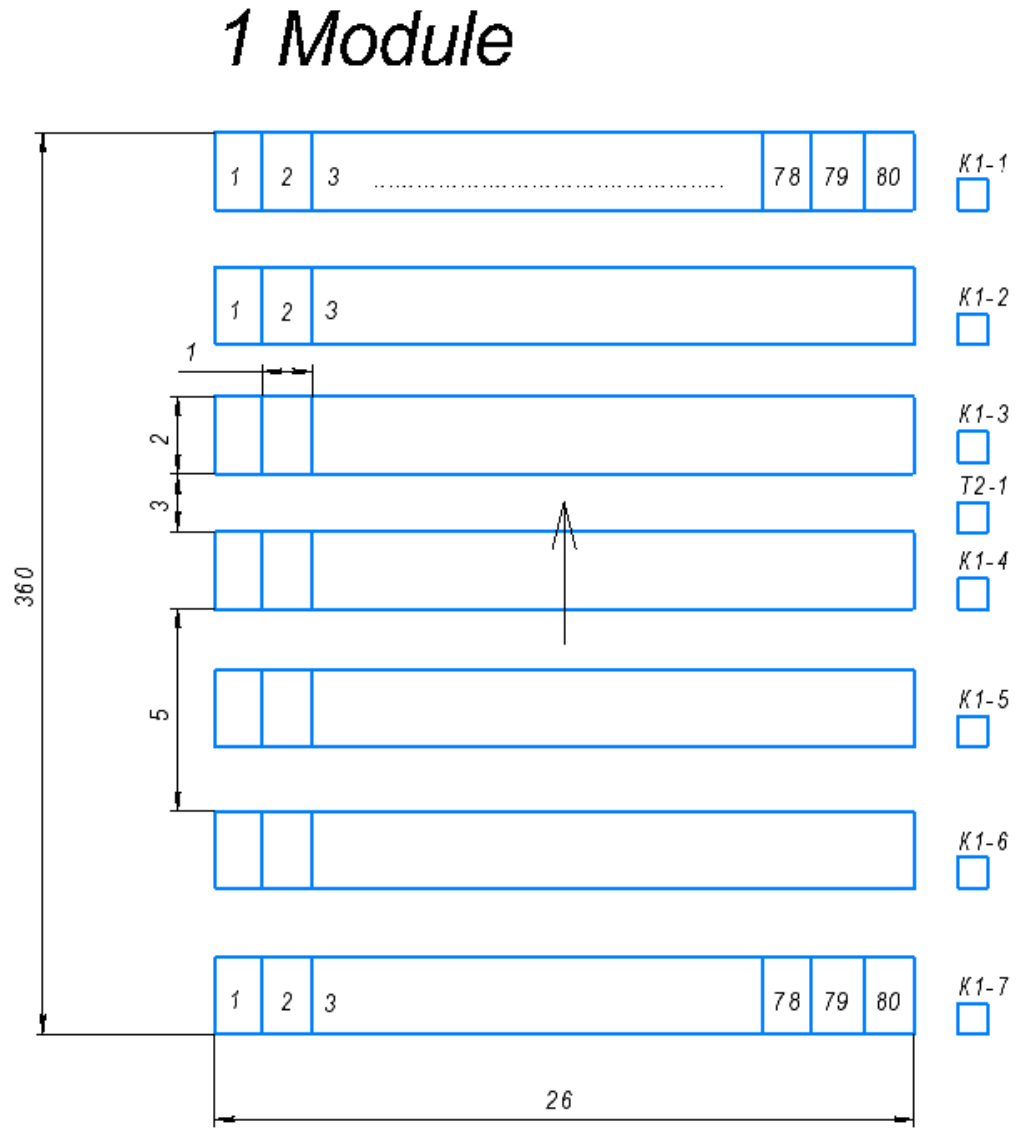

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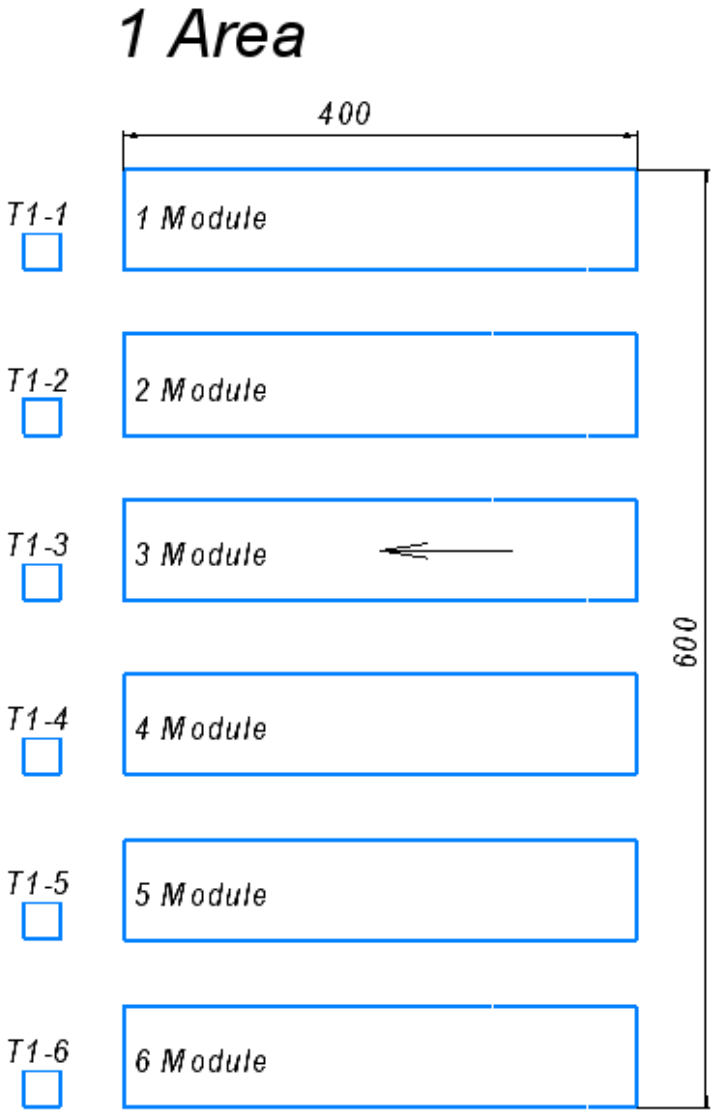

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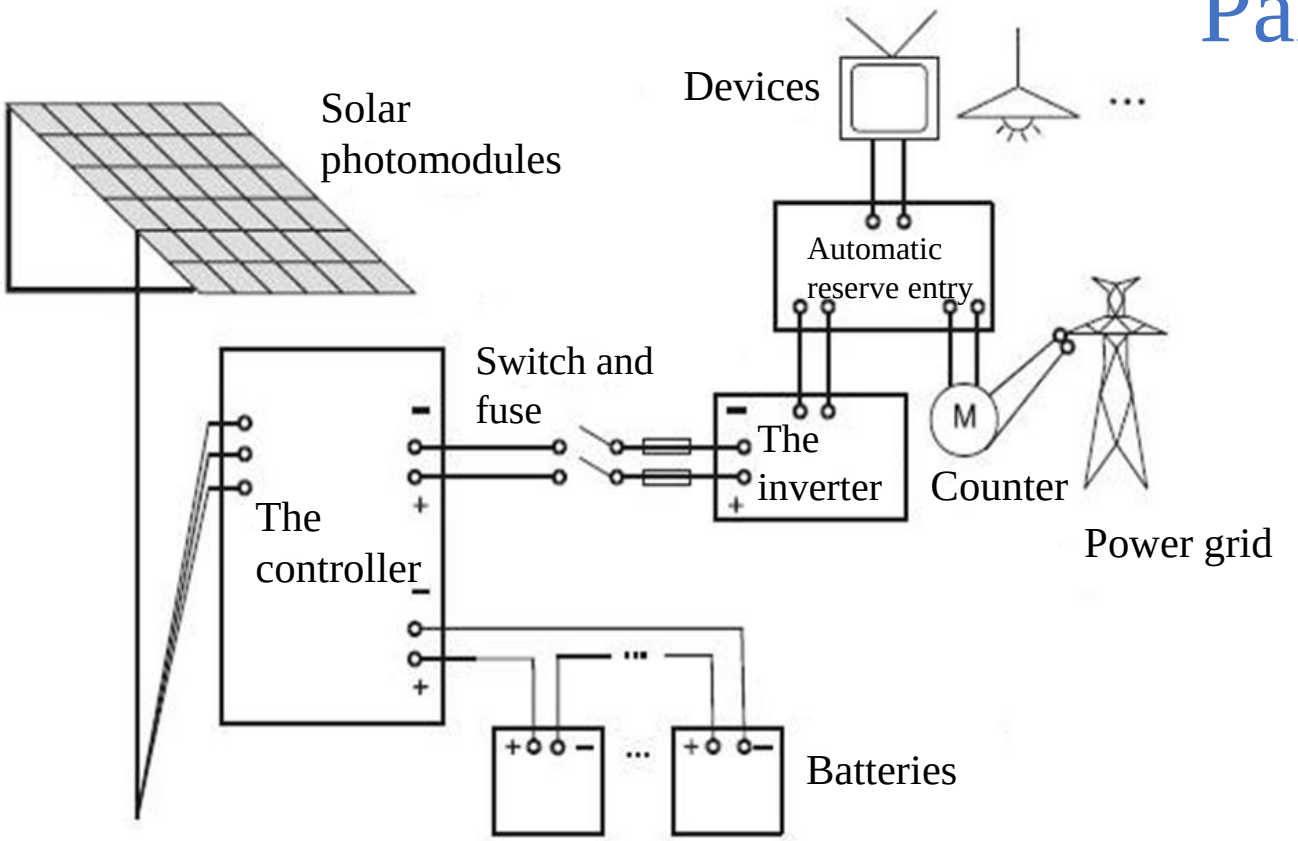
Panel connection diagram



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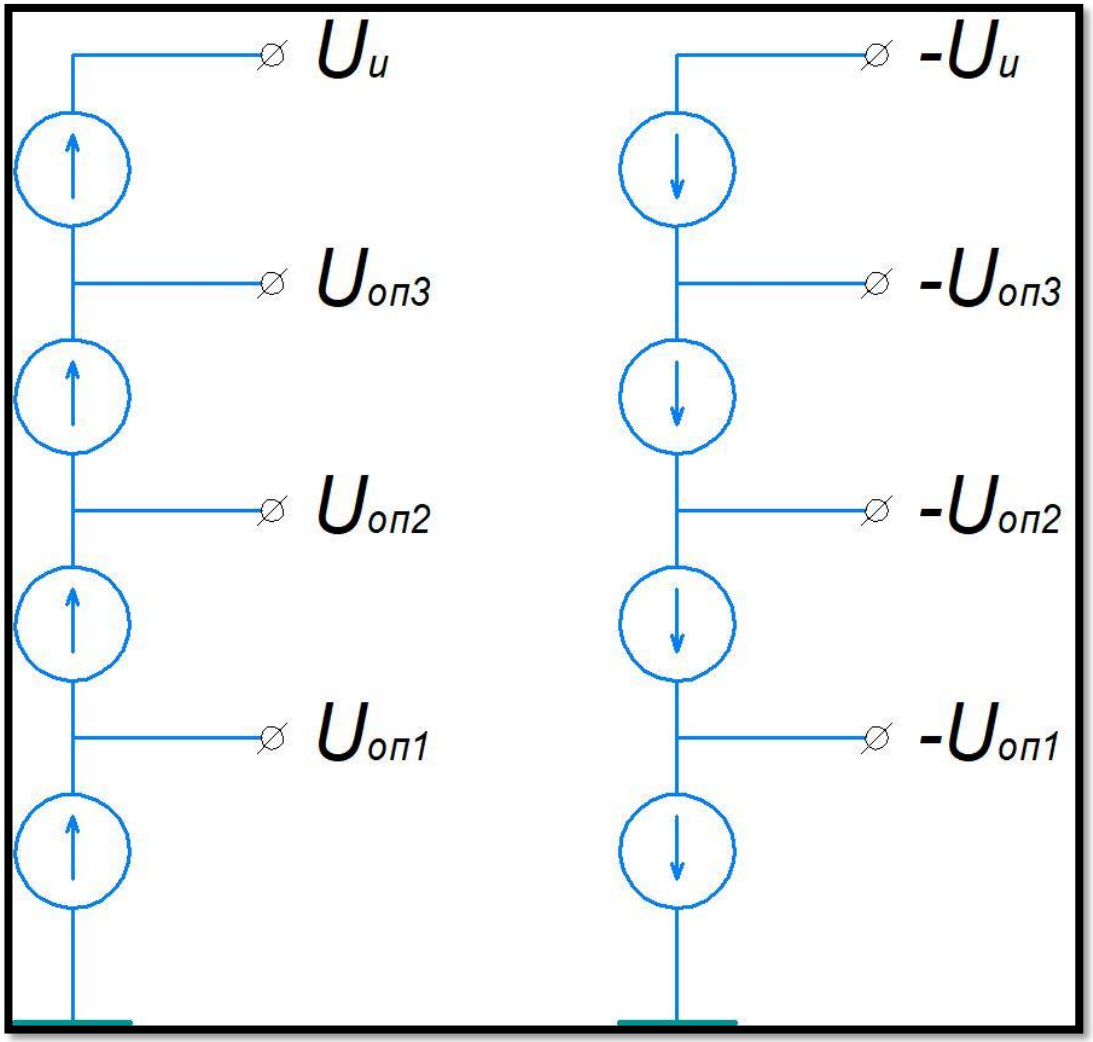

Solar panel switching scheme

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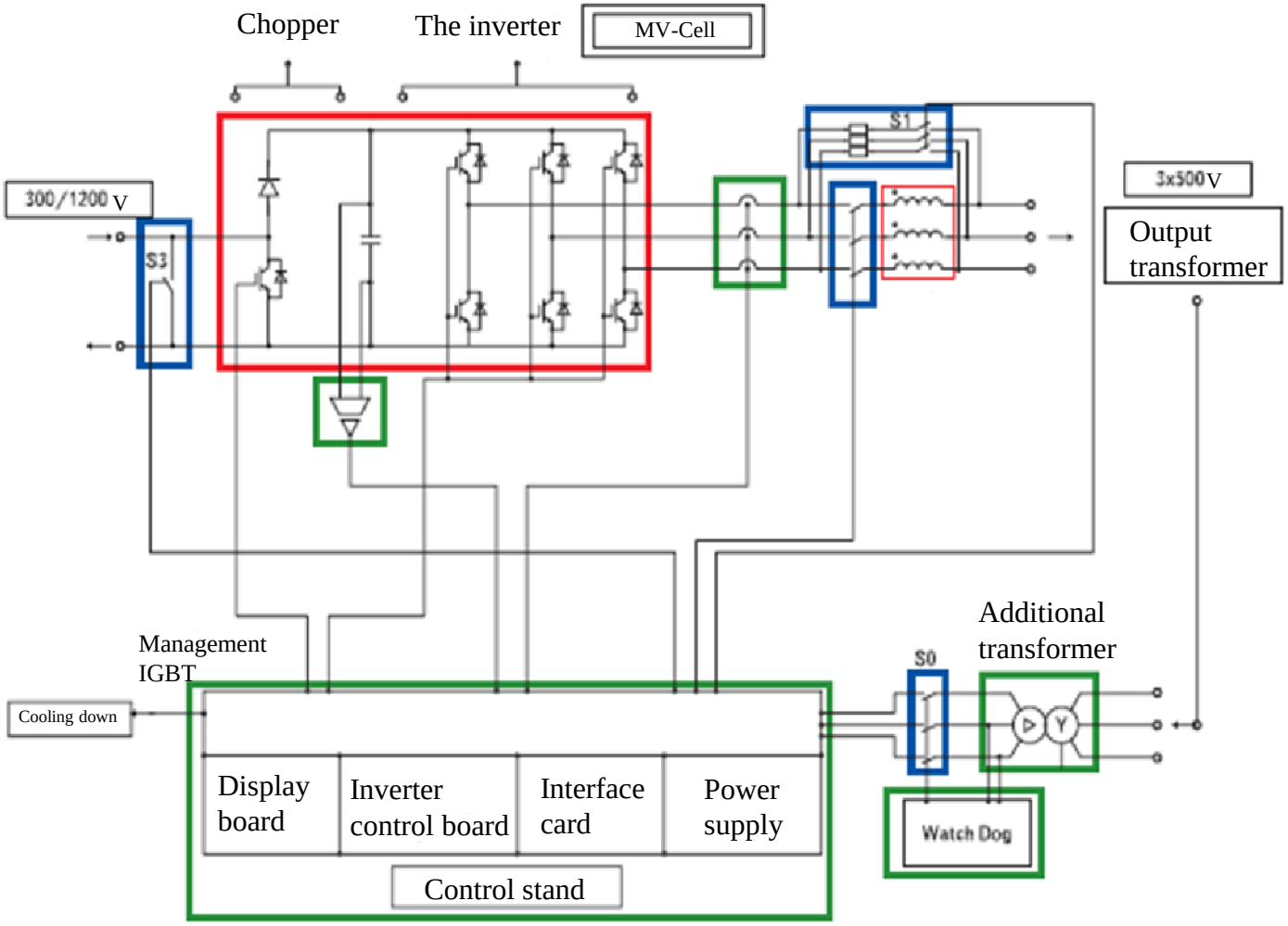
Industrial inverter circuit with PWM modulation



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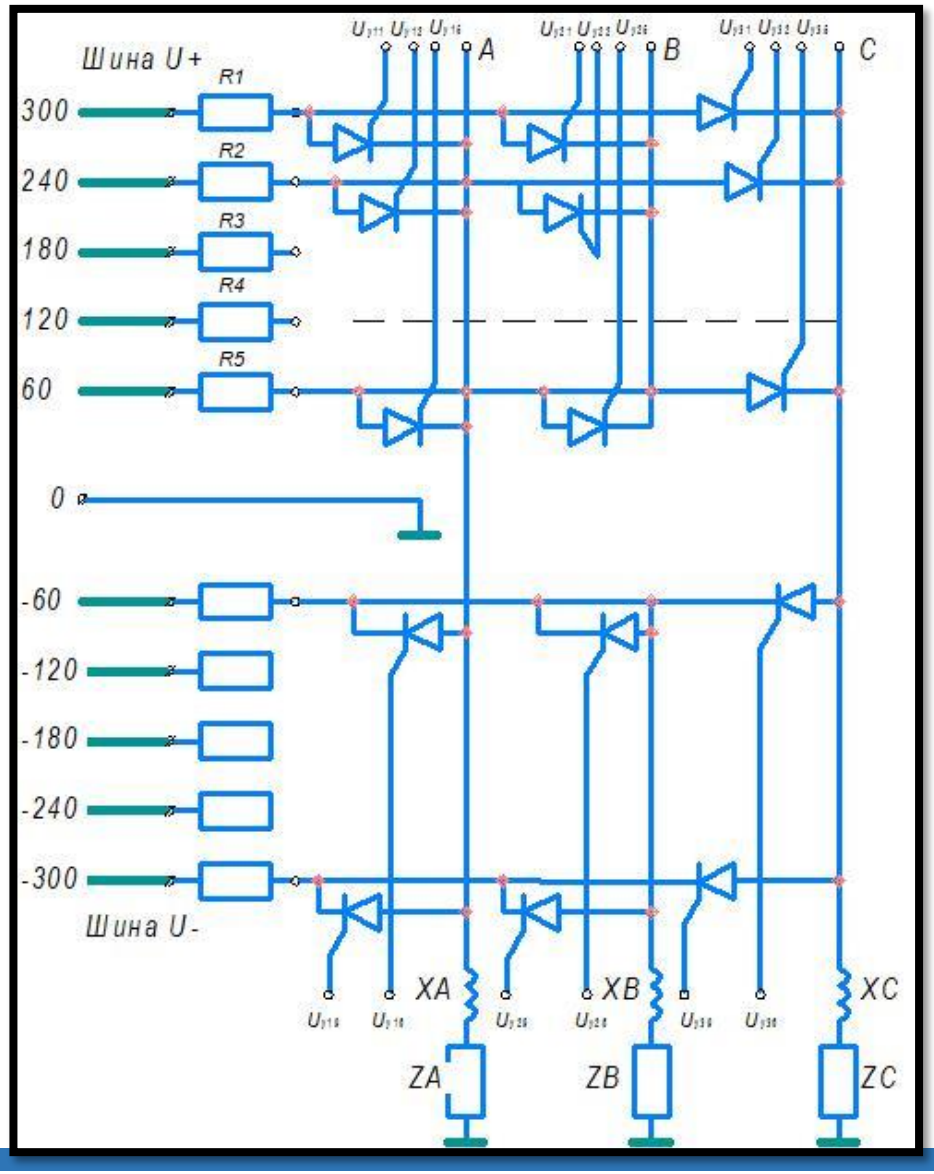

Thyristor switch circuit

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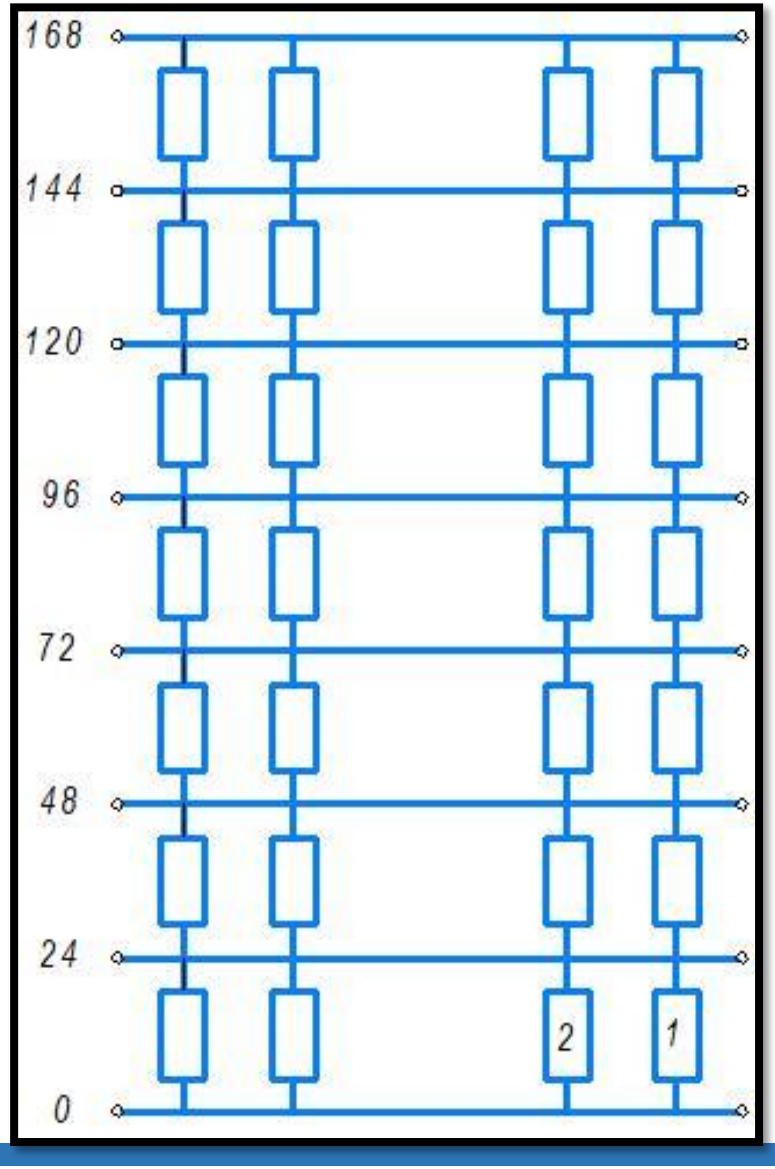

Solar panel connection

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Conclusions

1) Low cost switch without pulse transformer.
2) The device uses a lot of cheap thyristor keys.
3) Low level of non-sinusoidal distortion due to 5 voltage stages, low inductance of the reactor at the output.
4) The ability to reset excess power to the electrolyzer.
5) The presented station is obtained with high survivability, due to the large number of parallel channels.

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Thank you for your attention!

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