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Mimic In-House Article
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Solar Heating Temperature Controllers

Solar water heating temperature controllers like the N321S and N322S manage water circulation by monitoring the temperature difference between a solar collector (usually sun solar panels on a roof that heats water) and a storage tank (where the hot water is kept for use), ensuring that the heat is transferred efficiently while protecting the system. For example, in residential thermal tank setups, the N321S would activate the circulation pump only when the solar panel collector is hotter than the tank, in order to transfer the 'heat' without wasting any energy. Its single relay output makes it ideal for straightforward solar-only systems where no backup heating is needed. The device provides accurate temperature measurement with 0.6 °C accuracy and 0.1 °C resolution, in addition to built-in freeze and overheat protection, which safeguards water piping and prolongs the systems life.

The N322S, by contrast, is suited for more demanding applications such as swimming pool heating or boiler-assisted solar water systems. In pool heating, the N322S would circulate water only when the solar panel collector is warmer than the pool. It's heat booster relay can activate auxiliary heating to maintain comfortable temperatures during cloudy days or at night.

Another example is in a boiler-assisted heating system; here the N322S controller would optimise solar preheating and engage the boiler only when the solar heating energy is insufficient, thus ensuring consistent hot water supply for multi-residential buildings, or hospitals where the dual-relay functionality are highly beneficial. The N322S offers protection IP65 front panel and larger wiring capacity, making it reliable for outdoor or high-demand installations.

Both controllers use two NTC thermistor sensors capable of –30 °C to +105 °C measurement with high precision and support 100–240 V AC/DC power supply. While the N321S is simpler and cost-effective for basic solar circulation, the N322S provides greater control flexibility and backup heating integration, ensuring optimal energy use, system protection, and consistent water temperatures across applications like thermal tanks, pool heating, and boiler-assisted solar hot water systems.

Call us for more information on solar heating temperature controllers.

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