

## HVAC control

**Application:** medium-sized to large buildings with cooling tower

# Regulate cooling-tower water temperature and save energy

“ My cooling tower is a constant concern. Maintenance needs vary widely depending on the season, and the installation uses too much energy. I want a solution that will improve yield and reduce costs. ”

### Use speed drives to regulate the tower's fan and pump

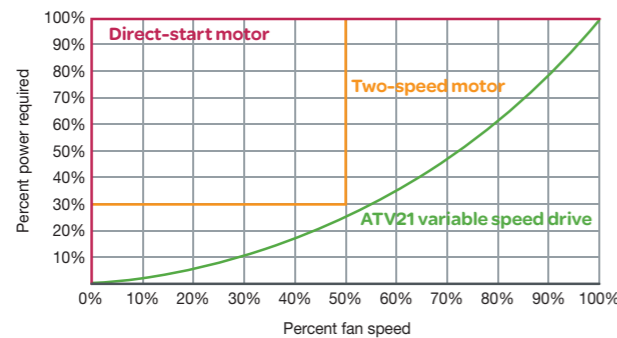
The best way to control air-water exchange in a cooling tower is to use variable speed drives to control the tower's fan and pump, eliminating additional maintenance-hungry mechanical systems while meeting the tower's needs. A PLC regulates fan airflow and pump volume via the variable speed drives.

**This solution uses up to 50% less energy than direct-start fans and pumps and eases maintenance.**

Over a given season, the fan and pump motors must operate at full speed just 2% to 5% of the time—the rest of the time this energy is wasted. Direct-start motors require additional mechanical systems to solve problems like fan blade rotation due to wind, or additional resistance due to freezing.

**This solution uses 20% less energy than two-speed motors and also improves maintenance.**

While two-speed motors offer a partial solution to energy consumption issues, they do nothing to resolve maintenance issues.



# Benefits

### For the user



> **Reduce energy consumption**

> **Improve yield** by regulating water temperature

> **Lower maintenance requirements,** especially in extreme weather

> **Quieter operation**

> **Low harmonics: THDI < 30%**

> **Eliminates inrush current due to motor start-up**

### For professionals

+ **Simpler mechanics** (no brakes, sensors, or rotation inverters)

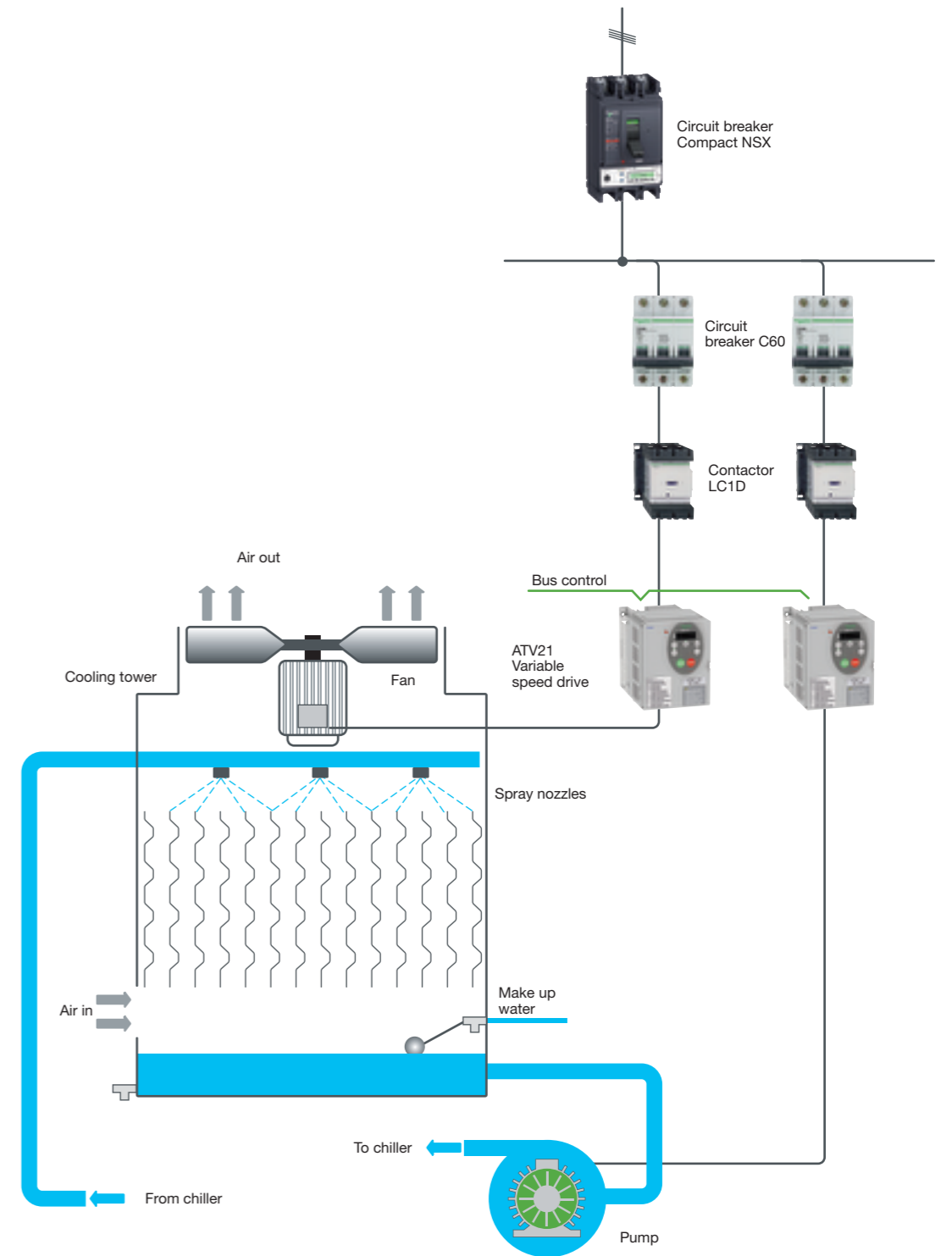
+ **Facilitates motor sizing** (over-speed and standby modes available)

+ **Enhanced process regulation**

+ **Extends lifetime** of mechanical components

+ **Facilitates maintenance planning**

- Measure
- Reduce energy consumption
- Reduce energy costs



### ATV21 speed drive



Range dedicated to building HVAC applications. All essential functions for variable torque pumps and fans applications:

- 3-phases 200/240 V, 380/480 V
- UL Type 1/IP20 and IP54 up to 75 kW

- Speed range: 1:50
- Overload : 110% - 60 s
- Integrated EMC filters class A or B
- Main communication bus used on the building market: LonWorks, Metasys N2, BACnet, and Apolgoe FLN.

- Conformity to the international standards and certifications : CE, UL, CSA, C-Tick...
- "Reduced-Capacitance" technology: immediately operational and without harmful effect, harmonics treatment without added artifices: THDI < 30%