



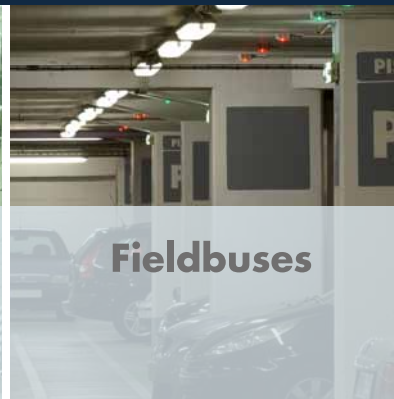
Sensors



Switches



Controls



Fieldbuses

Application notes



Application Note : August 2015

Market involved : Smart building

Product : RSWT 120mm

Customer : Panel builders, system integrators

Subject : Reduced water hammering during starting and stopping of centrifugal pumps in tall buildings

CUSTOMER ISSUE :

Tall buildings pose a challenge when it comes to water distribution to the high number of occupants in the building.

The first challenge is pumping the water from the mains (ground level) to the main reservoir (top-most floor). A 30-storey building typically requires a pump of not less than 30kW (1kW per floor).

During periods of high level occupancy, such as weekends, there is an even higher water consumption which means that the pump needs to start more often.

System integrators require proper solutions that can extend the pump's lifetime as well as robust solutions offering reliability even in periods of high occupancy.

OUR SOLUTION :

The RSWT soft starters have been designed specifically for centrifugal pumps.

All the 3 phases are fully controlled by thyristors to ensure an optimal starting current reduction and current balancing between all the phases.

A special self-learning algorithm ensures that the pump starts and stops with minimal vibrations whilst respecting the user-settings for ramp-up and ramp-down.

Internal bypass relays ensure that there is minimal heat dissipation in the electrical panel.

Ramp-up and ramp-down times can be adjusted up to 20sec to ensure that, in case of long pipes, the pump is stopped slowly reducing water hammering.

The RSWT soft starters are also rated for 20 starts/hr to ensure that the soft starter delivers the required performance even during frequent pump starts/stops.

BENEFITS :

- User friendly – through the self-learning algorithm which optimises pump starting and stopping
- Highly efficient current reduction with 3-phase control
- Reliability with high starts/hr capability
- Increased protection with settable Integrated overload
- Less time required during installation – just 3-knob settings
- Auto-recovery of alarms reduces service calls and maintenance interventions
- No need for an auxiliary power supply - more space in the panel
- Auxiliary relays for alarm and top of ramp indication