

Evaporator control



Evaporation concerns the removal of water from a product to produce a concentrate.

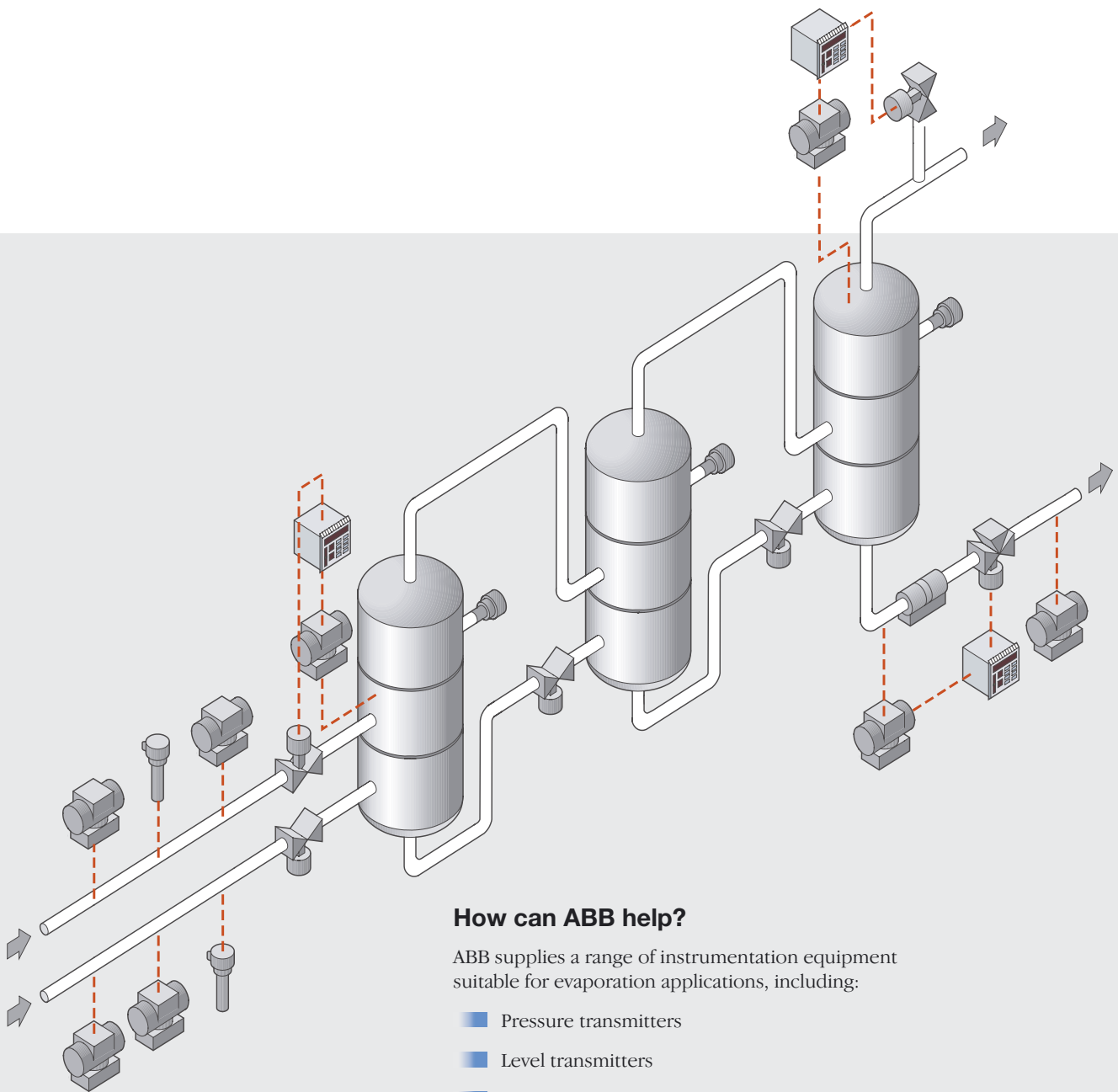
The process is typically used in the production of:

- Juices
- Milk/powdered milk
- Whey products
- Sugar
- Glycerin
- Industrial salts
- Food

How does it work?

- Steam enters the steam chest space surrounding the tubes
- The solution to be evaporated is fed into the evaporator body through a distributor
- The solution moves upwards into the tubes, which are then heated by the steam surrounding them
- The solution within the tubes absorbs heat as it comes into contact with the tube walls
- When the solution reaches boiling point, the water starts to vaporize. Initially, small pockets of vapor form near the base of the tubes. As steam is continuously applied to keep the tubes hot, the solution continues to vaporize and the pockets of vapor expand
- Unvaporized liquid is forced above the vapor pockets towards the tops of the tubes. As the mixture of solution and vapor rises from the top of the tubes, the vapor continues upwards, whilst the heavier liquid falls back
- Because of the boiling action, this liquid cannot return to the tubes. Instead, it travels to the bottom of the evaporator through the large central downtake
- The returned liquid is mixed with incoming feed from the feed distributor and again is carried upward through the tubes, where further vaporization takes place





How can ABB help?

ABB supplies a range of instrumentation equipment suitable for evaporation applications, including:

- Pressure transmitters
- Level transmitters
- Flowmeters
- Flow transmitters
- Temperature sensors and transmitters
- Valve positioners and actuators
- Process indicators
- Recorders
- Controllers

