

Count on us.

# Accurate tank or truck filling

## Problem case

A customer wanted a reliable, accurate and fully automated system to fill his trucks with a mix of Chlorine solution and water. Some challenges were, maintaining the desired ratio in each flow range, even at low flow conditions during start-up. An overrun needs to be corrected as there is still fluid remaining in the system which has already past the pumps. A user-friendly operation was desired so their own truck drivers could easily operate the system without any technical or detailed knowledge.

## Fluidwell solution

It was accomplished with a Fluidwell F124 Ratio Controller and a N413 Batch Controller.

This F124 monitors each line of flow and controls the ratio with a valve in the flow line of the additive. The N413 controls the batch size with two heavy duty relay outputs controlling the fluid pumps. A batch size is entered easily with the full numerical keypad of the N413.

When starting the system, the “hand mode” of the F124 allows an initial state for the additive valve despised the lack of flow. As the pumps start up and the flow rate increases, the operator can easily change the Ratio Controller back into “ratio control mode”. From this point on, the F124 controls the valve and maintains the desired ratio.

The N413 batch controller knows from past batches that an overrun was expected and automatically calculates the “overrun cut-off time”. Turning off the relays, just early enough, that this excess flow will be counted in the batch process. Resulting in an accurate batch, every time.

## Results

- ✓ A satisfied customer with a reliable ratio controlled batch process.
- ✓ An accurate ratio over the complete flow range due to the hand and ratio control mode of the F124.
- ✓ An accurate batch every time due to self-learning overrun correction. No more spilling or dangerous situations because of the leakage of overrun fluids.
- ✓ Minimal waiting times in between truck fillings, as the truck drivers can operate the system. Even with changing batch sizes due to the truck capacity.

## More advantages

A receipt can easily be printed after each batch as evidence of the delivered quantity.

The various options (analog and digital in- and outputs, power supplies and communication) are being valued as very convenient and competitive in the market nowadays. Additionally, the Fluidwell controllers do not require expensive maintenance. A periodic check on the casing, cable glands and wiring is more than sufficient.

More information: [Information and datasheet F124](#)

[Information and datasheet N413](#)

[Animation of this tank or truck filling application \(YouTube\)](#)

Truck filling



F124 Ratio Controller



N413 Batch Controller



Tank or truck filling animation

