The four common plant measurements are pressure, temperature, level, and flow. Of the four, temperature is often lost in the background compared to the other measurements. However, monitoring and controlling the process temperature accurately, quickly, and reliably can have as much benefit as the other three common measurements.

Yokogawa's smart temperature transmitters can give you better insight into your process's temperature profile by offering the choice of routing two separate inputs into the transmitter.

The dual inputs can offer:

- Failed Sensor Backup (Hot Swap)
- Temperature Averaging
- Differential Temperature

Applicable Models

YTA610 with Sensor input code "2"

YTA710 with Sensor input code "2"

YTA Series

Failed Sensor Backup (Hot Swap)

The YTA610/710 with dual sensor input has an automatic sensor backup function that transfers the analog output (AO) to the secondary sensor when the primary sensor fails. When this occurs, an error message is displayed on the local indicator, and an alarm message is generated and transmitted to the controller.

The failed sensor can then be replaced without losing vital process information. This allows sensor replacement at the next convenient maintenance period, avoiding unnecessary trips to the field and a possible unscheduled process shutdown.
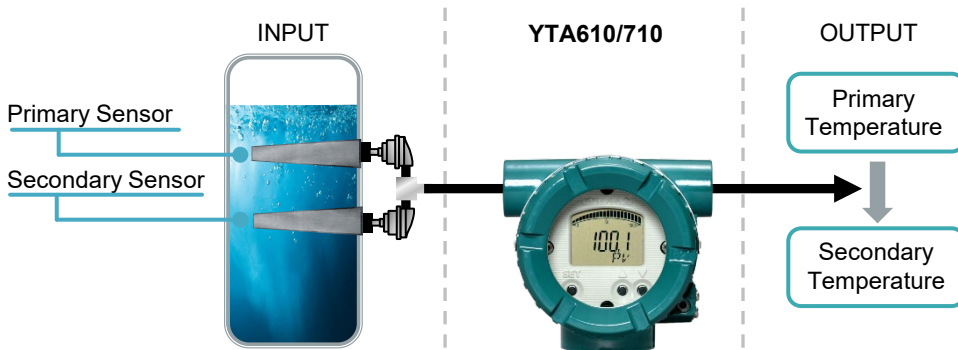
Figure 1. Application of Failed Sensor Backup

Temperature Averaging

With the temperature averaging function, a single YTA610/710 can simultaneously take temperature measurements from two sensors. The transmitter can then calculate the process's average temperature from the two sensors.
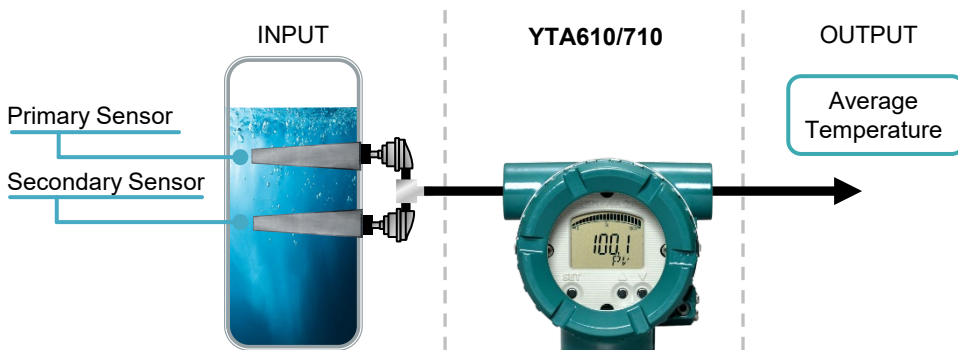

Figure 2. Application of Temperature Averaging

Differential Temperature

With the differential temperature function, the transmitter can calculate the difference between two temperature measurements of the process from the two sensors.
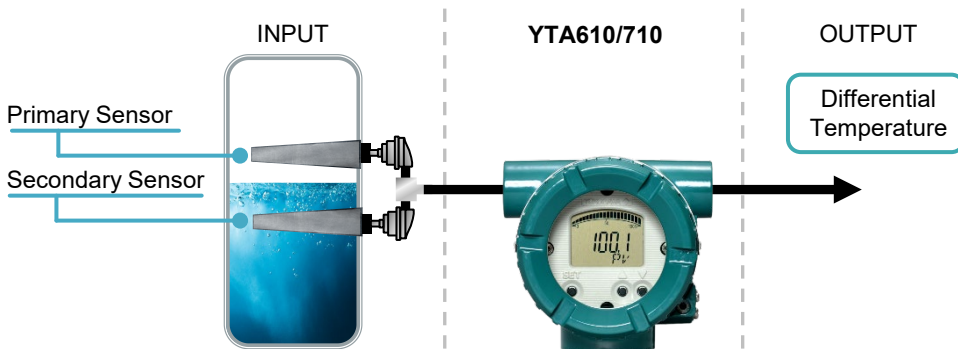

Figure 1. Application of Differential Temperature

Conclusion

Yokogawa's [YTA610/710 Field-Mount Temperature Transmitters](#), with the dual sensor input option, allow the user to measure process details not offered before. The dual sensor can keep the run time high with the Failed Sensor Backup (Hot swap). It can provide new insight using the Temperature Averaging or Differential Temperature Function.

OpreX™ Yokogawa achieves operational excellence by providing products, services, and solutions based on the OpreX comprehensive brand that cover everything from business management to operations.

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