

# Local intelligence **keeps operations moving**

Failing safe made simple with SITRANS LT500

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What happens when a PLC goes down? For some operations, this means hours or even days of costly downtime. Siemens SITRANS LT500 offers another layer of process protection, combining integration of control systems with local intelligence—keeping critical operations and pumps running when a PLC fails.

Industrial operations depend on intelligent control systems day in and day out—keeping processes running and monitoring for potential faults. But no PLC is completely immune from failures—sometimes because the device itself has an issue and other times because of external conditions.

What's key, however, is what happens next.

For many companies, unfortunately, the answer means downtime: a failed or obsolete PLC can be difficult to diagnose, repair or replace—made more complicated when the device's original documentation is incomplete or replacement parts aren't easily accessible. And every hour that processes are down can be measured in dollars, from lost productivity to operational interruptions.

So how can operators design critical processes with failure in mind? For level and pump applications, Siemens SITRANS LT500 level, flow and pump controller builds this critical layer of resilience into your automation system.

## Local intelligence when needed most

SITRANS LT500 is designed to operate as a level and pump controller but can also become part of a facility's automation environment. Still retaining local control abilities in the field, the device can also be integrated into a plant's automation system for centralized monitoring and control.

Communication options including PROFINET, Ethernet/IP and Modbus TCP provide integration between SITRANS LT500 and control systems. But if the control system goes down, even those fieldbus interfaces won't help... more on that later!

For automated facilities, the SITRANS Library provides function blocks, faceplates and block icons to help integrate SITRANS devices into SIMATIC PCS 7 and Siemens TIA Portal. Operators can monitor measurements, alarms and device status through the faceplates, and access configuration and diagnostics through the WebIQ app. For non-Siemens systems, Ethernet/IP in conjunction with an EDS-AOP as well as Modbus TCP options exist for SITRANS LT500 integration.

## Notes from the field: when the PLC fails

Take a wastewater pumping station. Under normal operating conditions, the PLC acts as the primary controller, with SITRANS LT500 providing level information to the automation system.

But if that PLC fails, SITRANS LT500 can take over—by making control decisions locally. Wastewater operators could set this up in a couple different ways, depending on preference and the application itself. One option is to use the PLC to set the ON set points to a value and set SITRANS LT500 slightly higher than that. So, if the PLC doesn't start the pump and the level continues to rise, the controller then starts the pump to ensure processing continues. Another option is to wire the system in such a way that either device could take control based on a manual switch set a certain way.

Either way you set this up, the PLC is the primary control system—with a backup able to keep processes moving if things go wrong.

In wastewater applications, this is especially valuable in high-volume storm situations. If communication with the control room is lost, SITRANS LT500 can continue monitoring level and performing these pre-set local functions rather than waiting for instructions from a controller that's no longer available.

And while this setup is helpful for wastewater facilities, it can also be used in other industries and applications from process tanks to chemical storage to vessels where maintaining continuous level control is essential.



# It’s okay to fail—if you fail safe

SITRANS LT500 can incorporate level setpoints, alarms and pump management functions into its local control strategy—and can be integrated into SIMATIC PCS 7 and Siemens TIA Portal. Most importantly, the controller can keep things moving regardless of what’s happening with the PLC.

Instead of relying entirely on a central controller and planning mitigation options, operators can design the system from the outset so that this intelligent device is in place and able to take responsibility for critical functions.

At the end of the day, the goal isn’t to prevent every failure—as much as we might like to. Instead, the goal is to make sure that when one part of your system fails, your entire process stays safe. SITRANS LT500 allows for independent fail-safe settings for the analog outputs, relays and totalizers. The fail-safe action can be set for each of these functions, ensuring the system can support whatever scheme is required for the specific process or operation.

While failure to plan often equates to planning to fail, in the context of critical processes, good engineering actually does mean planning for failure—as part of your process scheme from the outset. It means not treating redundancy as an afterthought but instead building it with intelligent devices from a trusted partner.

Because equipment will fail. The real question is what happens next.




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