→ Linde Kryotechnik AG

Control System Upgrade for Existing Plants – Future-proofing Your Cryogenic Plant



CHALLENGE

Many cryogenic plants from Linde Kryotechnik have been operating successfully for decades. Various updates/upgrades to different plant components are necessary over these long lifecycles.
This can be challenging if individual system components have been discontinued. Introduced in 1994, the Siemens S7-300 / S7-400 control systems are a case in point. Spare parts for this product family are limited in availability and are often supplied exclusively as exchange units, resulting in extended repair lead times and unnecessary additional expense.

Limited spare part availability can result in:
— Increased risk of unplanned plant downtime
— Longer outages in the event of a failure
— Limited warranty coverage for original components

SOLUTION

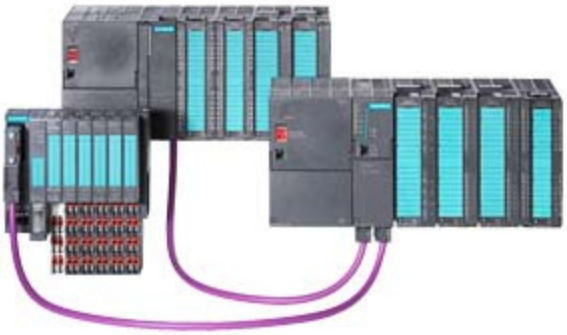
To overcome these uncertainties, we offer a planned control system upgrade to the latest Siemens S7-1500 platform, including modern WinCC visualization and – if required – additional electronic components and process modules. This modular upgrade strategy is an effective way to secure the reliable operation of your hardware and software, and the continued availability of technical support over an extended asset lifecycle.

BENEFITS AT A GLANCE

Capital efficiency: Extended plant lifecycle
Long-term availability of spare parts: Reduction in or elimination of unplanned downtime due to spare part shortages
Protection of investment: Full warranty on new control system components
Full accountability: Unlike third-party upgrades, where Linde Kryotechnik support may be limited or unavailable, our upgrade plans come with an unlimited process support commitment
Transparent foundation for optimal support: Complete documentation of the plant's as-built status archived and maintained by Linde Kryotechnik
Proven expertise: Revamp, testing and commissioning performed by the original plant manufacturer

TECHNICAL HIGHLIGHTS

— Control software based on the latest Linde Kryotechnik standard, continuously developed over 30 years of experience
— New visualization system using the latest WinCC version (e.g., WinCC V8.1; WinCC Unified available as an option)
— Compliance with current IEC, EMC and safety standards
— Network technology based on the PROFINET standard for faster, seamless connectivity
— Optional integration of additional components (e.g., compressors with status and measurement values)
— Modern, structured electrical documentation
— Optional integration with the building management system (BMS) using the OPC UA communication standard or the Modbus TCP communication protocol
— Optional remote connectivity and remote support
— Optional redundancy concepts for enhanced availability



Siemens S7-300 / S7-400 / ET200S control system (discontinued)



Siemens S7-1500 control system (current generation)

OUR UPGRADE OPTIONS

Option 1 – Control System Upgrade

Recommended for plants with a modern infrastructure (plants built over the past 20 or so years)

— Replacement of programmable logic controller (PLC), visualization system and distributed I/O peripherals in the existing control system
— Minimal modifications to the existing plant
— Short downtime during a planned upgrade

Option 2 – Complete Control System Retrofit

Recommended for plants with outdated control technology (plants built approx. 20 or more years ago)

— Complete reconstruction of the control system cabinets according to current standards
— Increased safety, availability and service life
— Long-term operational reliability over extended lifecycle

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