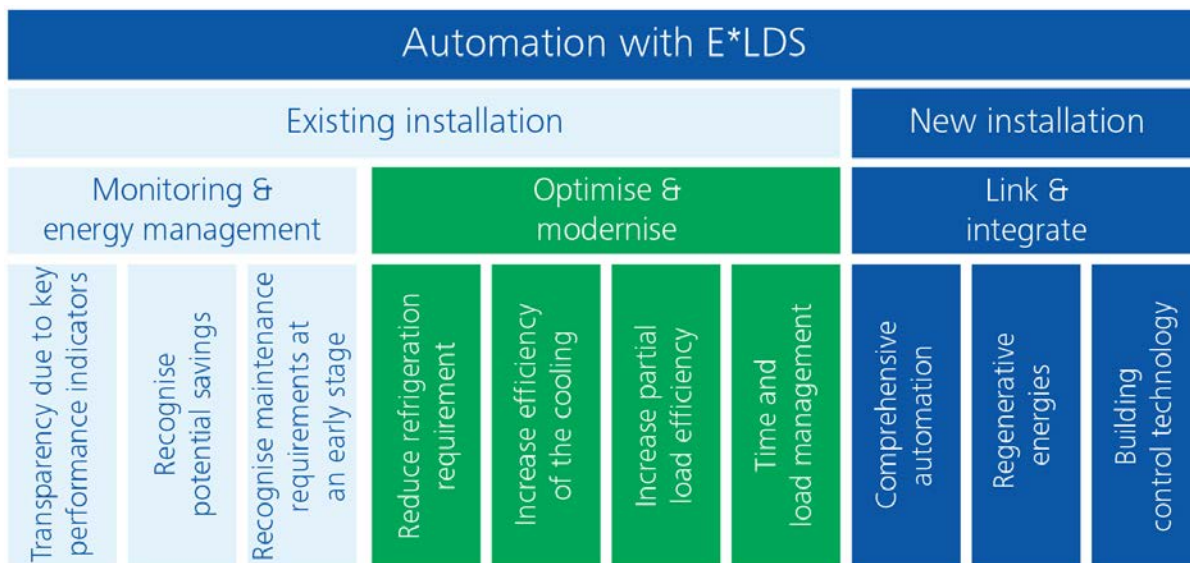


Eckelmann

Save energy properly with E*LDS



Automation as key factor

Eckelmann advises operating companies and refrigeration engineers individually and calculates the expected life cycle costs for investments in energy-efficient control technology and the optimisation of existing systems. This information sheet describes the most effective E*LDS strategies for increasing energy efficiency.

Automation technology significantly influences the energy efficiency of refrigeration pack systems. On the one hand, of course, this is due to the fact that it takes over all measurement, control and regulation tasks. Refrigeration pack systems are complex, highly non-linear systems with many internal feedbacks and disturbance factors (e.g. an open cold room door) as well as external influencing factors (e.g. temperature outside). Such systems can be modelled and intelligently controlled by electronic control systems. On the other hand, an automation system provides an integrated information infrastructure that enables effective linking of refrigeration technology with higher-level energy and building management. The integrated E*LDS automation concepts are the basis for effective and transparent use of energy.

But it is also true: Automation technology is only as good as the installation technology and vice versa. Only when installation planning and automation design go hand in hand right from the start can solutions be created that make the most of what is technically possible today. Eckelmann therefore cooperates closely with planning offices and refrigeration engineers in the project planning of new installations or the modernisation of existing installations. Operating companies thus benefit from harmonious solutions that are completely tailored to their individual requirements. Operating companies are well advised not to regard the improvement of the energy efficiency of existing installations as a one-off action but as a continuous challenge. This is where E*LDS comes in and provides operating companies and supporting refrigeration specialists with the right tools to continuously optimise their systems and make them more efficient. Eckelmann has proven in numerous reference projects that this calculation works:

Depending on the scope of the measures, automation with E*LDS saves up to 25% energy.

E*LDS strategies for increasing energy efficiency

Process-related measures

Reduce refrigeration requirement of the refrigeration points
Auto-adaptive control methods
Continuous and need-based evaporation
Dynamic increase of evaporation temperature with E*COP+, also for existing installations with solenoid valves
Better evaporator utilisation due to optimised superheat of the refrigerant
Regulation according to the actual temperature in the refrigeration point: via the wireless sensor system
Automatic defrost on demand
Fan management at the evaporator

Increase efficiency of the refrigeration pack systems
E*COP+ suction pressure optimisation
Reduction of the condensing temperature
Automatic monitoring of the condenser contamination
Dynamic adjustment of refrigeration capacity, speed control for compressor & condenser
Automatic optimisation of the partial load efficiency
Auto-adaptive finding of the optimal operating point
Enthalpy-controlled frame & pane heater

Overall energy efficiency

Measure and analyse
Active energy management: Monitoring of the temperatures and energy consumption using LDSWeb.
E*BenchMark functions for standardised system comparisons
COP Live monitoring
Tools for analysis and optimisation of setpoints and hystereses
Expert system independently identifies key problem issues
Recognise potential savings
Evaluate optimisation measures

Integrate
Coordination of all building control systems, e.g. refrigeration technology, heating, ventilation, air conditioning or lighting
E*ThermalGrid: Waste heat utilisation via heat exchanger for heating or service water heating
Heat pumps and geothermal energy
Time management across all subsystems
Load shedding management for tariff optimisation
SmartGrid connection
Prevent simultaneous cooling and heating

E*LDS combines energy with efficiency

E*LDS from Eckelmann is one of the leading technologies for the control, regulation and remote monitoring of industrial and commercial refrigeration systems. Numerous renowned food and drink retailers rely on the automation system for energy efficiency, reliability and ease of operation in food and drink refrigeration. The specialised refrigeration technology control system also integrates numerous functions for building management.

This results in integrated automation solutions that sustainably save energy.