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CORE

ADVANCED PROCESS CONTROL

CONTROL YOUR PROCESS

STABLE SUSTAINABLE SAVINGS

CORE was founded by dr. scient. Preben Alstrøm, who developed the CORE advanced self-learning controllers, which within a few years have spread across the globe. Based on the significant savings CORE has provided, especially to the industry for animal by-products, a partnership with Haarslev Industries was established in 2016.

Today CORE's process controllers are delivered from offices in Denmark, USA and Australia.

The DNA of CORE is about stable sustainable savings. We are focused on optimizing energy efficiency, yield, product quality, and capacity, reducing the level of your investment and increasing your profit.

Improving the processes is always the key. Large variations in industrial operations is a well-known challenge world-wide leading to excessive energy consumption, lost production time, bottle necks, and other irregularities.

Loss of stability of just one unit operation can have significant consequences for the yield and the quality of the final product.

CORE SOLUTIONS

YOUR PROCESS – OUR FOCUS

The production operation must continuously be adjusted to obtain the best results. Unlike standard process controllers, CORE's patented software utilizes critical information regarding process history and adapts to the variations before it is too late.

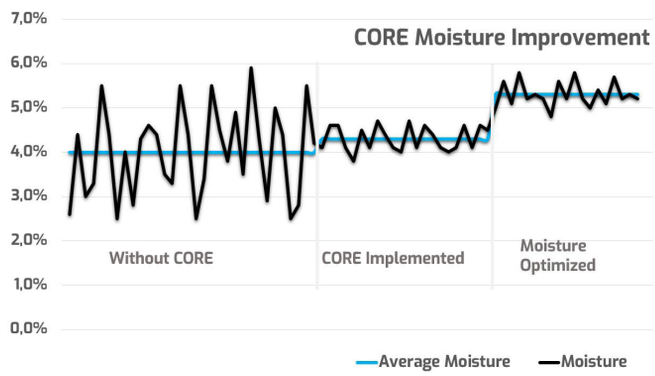
This results in a leaner production, higher yields and a more uniform quality of the end products.

If you observe variations in your processes, it is highly likely that we can help you improving your processes and provide real savings and better results for many years to come.

CORE's advanced process controllers work like a "cruise control" stabilizing operations, leading to significant savings and benefits within a short payback period, which is generally less than 12 months.

ADVANTAGES

- Reduced energy consumption
- Increased capacity
- Higher yield
- Improved product quality



CORE PRODUCTS & TECHNOLOGY

Controller	Machine	Main target
CORE-DDRY	Cooker/Disc Dryer	Temperature/Moisture
CORE-PRS	Press	Amperage/Torque
CORE-HEAT	Preheater	Temperature
CORE-EVAP	Evaporator	Dry matter
CORE-DEC	Decanter	Torque

We are in the unique position to offer you the patented CORE control technology consisting of our Advanced Process Controllers, our detailed process analysis and our specialized optimization concept.

CORE controllers are applicable for high as well as low temperature production lines, and controllers are provided for selected machines as well as for complete production lines.

CORE builds a data-driven model for the unit operation based on process responses to adjustments. The advanced process controller uses the model to predict how the process will respond to changes, and adjust the process accordingly to achieve the desired response.

The differences between the actual response and the model predicted response is used to fine tune the model, thus the model continuously adapts the amplification and response time to the actual process conditions. The CORE Controller thereby reduces variations significantly (30-60%).

THE ADVANCED CORE CONTROLLERS ARE

- Delivered on standard PLC platforms
- Swiftly implemented and commissioned
- Installed without disturbing production

AND YOU WILL ENJOY

- Clear interface and communication
- High stability - variations are significantly reduced
- Pay-back period less than 12 months

CORE PROJECTS

THE OPTIMIZATION PROCESS

The CORE optimization process is carried out in four steps:

1 ANALYSIS, INTERFACE, CONFIGURATION AND PARAMETRIZATION OF CONTROLLERS

CORE review in detail the existing process control, the available signals and the PLC network. The specific advanced controller modules required are then configured, parametrized and downloaded on a separate PLC, which is sent to the plant for installation, together with signal interface, diagrams for installation and communication. The necessary communication units are also provided.

2 IMPLEMENTATION OF CONTROLLERS

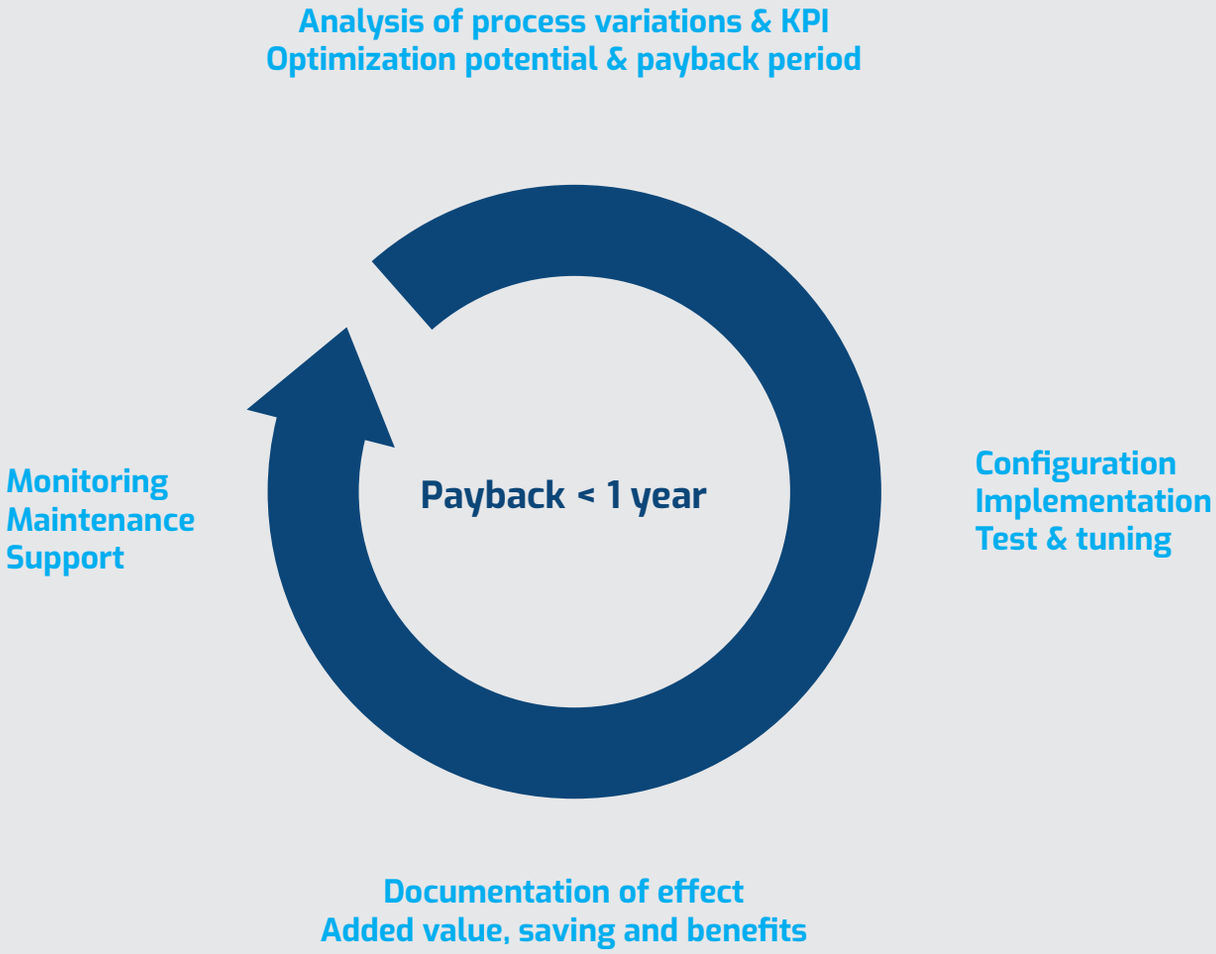
When the PLC and controllers have been installed and communication established, input-output tests are performed in order to ensure correct transfer of signals. Moreover, control signals are implemented in accordance with existing safety and process limitations.

3 TEST AND TUNING OF CONTROLLERS AND OPERATIONAL PROCEDURES

When the CORE controllers have been correctly implemented, a CORE engineer will be on site to commission the advanced controllers. The CORE engineer adjusts the controllers one by one keeping production running.
A simple on/off switch ensures that the CORE controller can be switched on and off at any time. After initial adjustments, a user manual / control description is provided and presented and operation procedures are clarified. Further adjustments may be needed and the production process is followed over a period with both on-site and off-site fine-tuning of the controllers. In this phase, it is essential to closely follow the results for the performance indicators in order to optimize the control goals.

4 FINAL TESTS AND DOCUMENTATION OF ACHIEVED PERFORMANCE AND PRESENTATION OF RESULTS

When the controllers have been tuned and are running well, final tests are done and CORE delivers and presents a report on the results achieved.



CORE CUSTOMER CARE

SUPPORT AND SERVICES

SERVICE AGREEMENT

- Process monitoring
- Thorough process control review
- New optimization opportunities
- Maintain optimal performance

CORE service agreements are focused on providing the necessary support in order to maintain and keep improving the process performance and the achieved savings and benefits.

CORE keeps an eye on your processes, checking all possible control issues that may arise due to changes in machinery, flows and transport systems, sensors and meters, energy resources, operating personnel and production plans. Possible issues are reported and actions needed are identified. CORE are dedicated to provide the responses needed to all your control questions.