



**Retrofitting and modernising
with PowerDRIVE-Retrofit**

PowerDRIVE-Retrofit

Reducing set-up times in the production process

Modern positioning systems offer technical and commercial advantages

The level of automation plays a key role in the productivity and quality of a plant or machine. The replacement of obsolete components, the inclusion of the latest technology as well as the replacement of manual units result in a higher level of automation of the machine or plant. Using our PowerDRIVE-System you can comprehensively modernise your machines and plants.

By using fully automatic positioning units you will minimise the set-up times and reduce the costs for a format change. You will increase the productivity of your entire plant over the long-term using the positioning system.

Depending on customer requirements and technical aspects, the PowerDRIVE-System is either integrated into the existing control system architecture, or installed as a low cost system in parallel.

The Plug-and-Play solution

Parallel system alongside existing control system architecture

PowerDRIVE-Retrofit is the economical option for upgrading a plant. Up to 50 handwheels can be straightforwardly replaced with modern fully automatic PowerDRIVEs. The drives are controlled by the PowerDRIVE-TouchBox with integrated PLC and touch display. During this process the parallel system operates independently of the existing machine control system. Usage of the existing system architecture continues unchanged.

PowerDRIVE-Retrofit — simply ready-to-connect

Commissioning PowerDRIVE-Retrofit is low-cost and convenient, as the system is configured without programming. The drive parameters are set and the format settings are defined on the PowerDRIVE-TouchBox with the aid of the operating software. You can start a complete format change with the press of a button!

Ready-to-connect components and pre-assembled cables ensure the complete system is installed quickly. The effortless routing of the cables in the switch cabinet and the wiring using PowerDRIVE-Connect make this solution a real Plug-and-Play system.

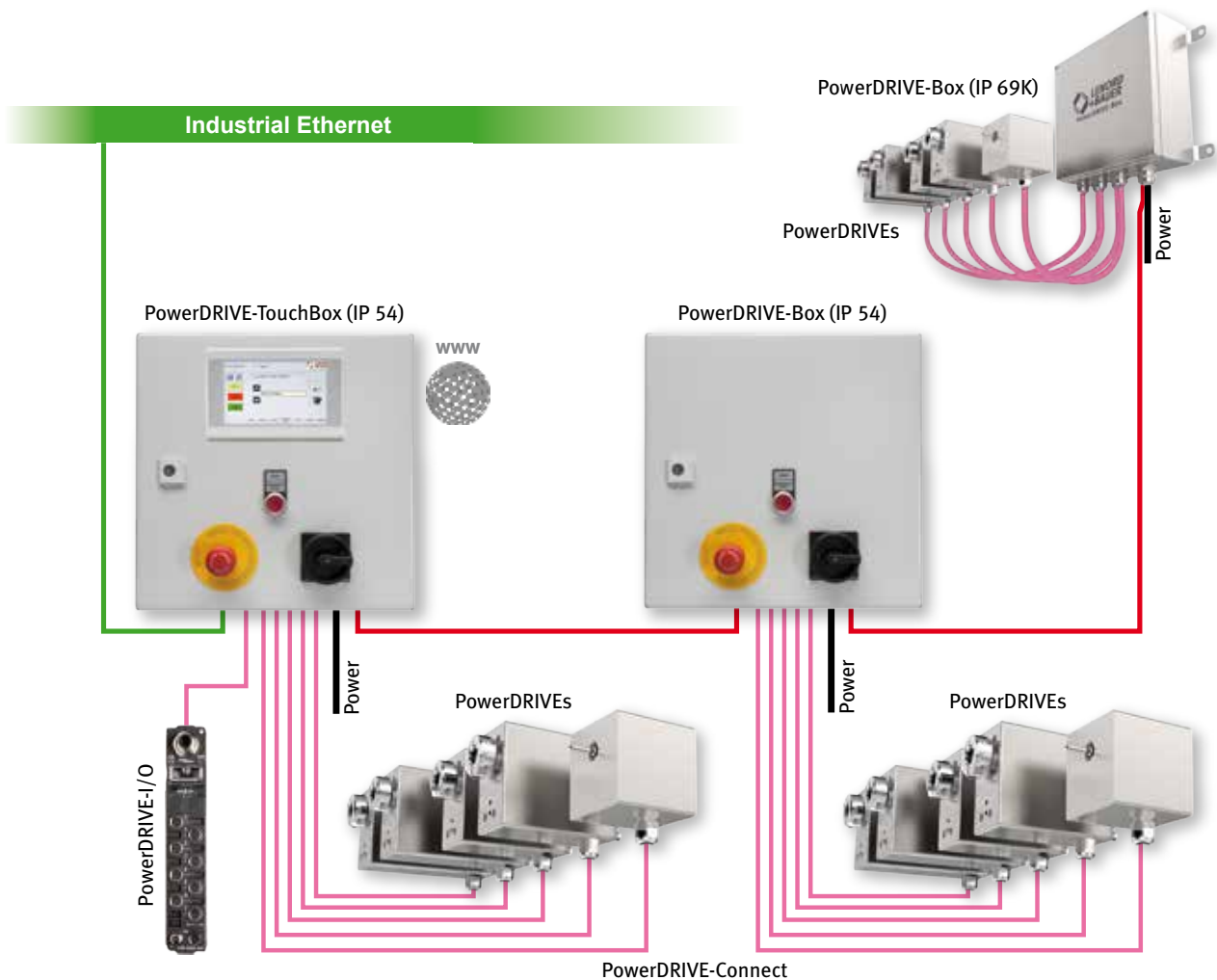
In operation the integrated emergency stop concept with main switch, safety relay and emergency stop button provides comprehensive protection. The parallel system is a complete package including wiring and is 100 % complete!

PowerDRIVE-Retrofit — complete package from a single source

With us you will receive all components from a single source. The complete system comprises:

- PowerDRIVE-Touch
PLC with touch display, including ready-to-use, configurable operating software and recipe management for several thousand formats
- PowerDRIVE-TouchBox
Switch cabinet for the connection of 5 positioning drives including PowerDRIVE-Touch, emergency stop concept and power supply unit
- PowerDRIVE-Motion or Positioning
Positioning drives with PowerDRIVE-Connect, that means hybrid cables including ready-to-use connectors
- PowerDRIVE-I/O
Decentral I/O module with a total of 16 digital inputs and outputs for external recipe selection and for the output of the machine status
- PowerDRIVE-Box (IP 20, IP 54 or IP 69K)
Additional junction box for expanding the system with a modular machine concept
- Optional commissioning service
With installation, cabling and commissioning on-site. If necessary we can offer you a complete service, give us a challenge!

Parallel system with PowerDRIVE-Retrofit: Connect – configure – start!



- Immediately ready-to-use touch PLC for the fully automatic adjustment of up to 50 axes
- Ready-to-use, configurable operating software with recipe management for several thousand formats
- Convenient routing of pre-assembled cables in PowerDRIVE-TouchBox and PowerDRIVE-Box
- PowerDRIVE-TouchBox and PowerDRIVE-Box with integrated protection concept due to safety relay and emergency stop button
- Recipe selection and monitoring of the machine position via coded inputs and outputs on the PowerDRIVE-I/O



The system at a glance

PowerDRIVE-Touch and PowerDRIVE-TouchBox — autonomous control

- Powerful PLC with 7" touch display
- Ready-to-use, configurable operating software for up to 50 positioning drives
- Recipe management for several thousand formats
- Ethernet interface on-board
- Optional WEB server integration
- Optional remote maintenance module
- Clear indication of the position of the positioning drives
- Electronic recording via log file in accordance with FDA 21 CFR Part 11



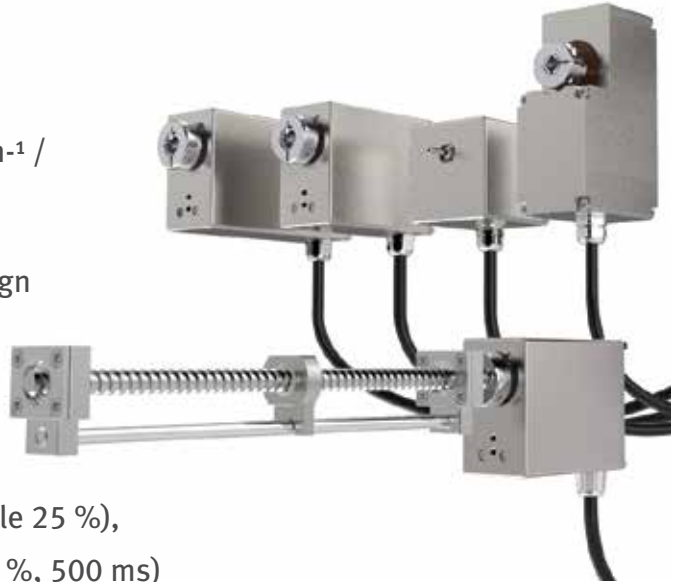
PowerDRIVE-Box – decentral connection

- Connection of up to 5 positioning drives PowerDRIVE using PowerDRIVE-Connect
- Integrated power management and electronic fuse for cable protection
- PowerDRIVE-TouchBox and PowerDRIVE-Box (IP 54)
 - Switch cabinet for usage in dry areas
 - With integrated 24-VDC power supply unit and main switch
 - Ready-to-use and pre-assembled including cabling
 - Circuit breaker for the control voltage
 - EMERGENCY STOP button and EMERGENCY STOP relay (EMERGENCY STOP concept) with power shutdown via main contactor
- PowerDRIVE-Box (IP 69K)
 - Stainless steel housing for usage in wet areas
- PowerDRIVE-Box (IP 20)
 - Aluminium housing for top hat rail mounting



PowerDRIVE — Efficient format changes with fully automatic positioning drives

- PowerDRIVE-Positioning in compact design
2 Nm at 230 min⁻¹ / 5 Nm at 100 min⁻¹ /
10 Nm at 40 min⁻¹ / 15 Nm at 30 min⁻¹
- PowerDRIVE-Positioning in short design
1.4 Nm at 230 min⁻¹ / 3.5 Nm at 100 min⁻¹ /
7 Nm at 40 min⁻¹ / 10.5 Nm at 30 min⁻¹
- PowerDRIVE-Positioning in stepped design
Compact: 5 Nm at 70 min⁻¹
Short: 2.5 Nm at 70 min⁻¹
- PowerDRIVE-Motion:
Positioning: 0.4 Nm (750 min⁻¹, duty cycle 25 %),
Cyclic operation: 0.25 Nm (duty cycle 50 %, 500 ms)



PowerDRIVE-I/O – Digital input and output module

- Decentral I/O module with bus support
- 8 digital inputs and 8 digital outputs 0.5 A
- Direct CANopen connection (BUS IN/OUT)
- IP 67, encapsulated module electronics, shock and vibration tested
- External recipe/format selection using binary code
- Output of the status of the PowerDRIVES (in position yes/no)



PowerDRIVE-Connect – Well thought-out connection concept

- Freely configurable hybrid cable suitable for drag chains
- For the automatic configuration and setting of parameters for the positioning drives
- Optionally with hybrid connector
- Optionally also with UL/CSA approval



Retrofit – Greater cost-effectiveness for your machine and plant

Together with you we calculate the payback period for your investment.

In principle: The more often a format is changed, the quicker your investment in the PowerDRIVE-System will pay for itself.

In a few minutes we calculate, using our ROI calculator, how cost-effective our retrofit solution is for you and when you can expect a Return on Investment (RoI). You will be surprised how quickly the modernisation of your machine or plant using PowerDRIVE-Retrofit will pay for itself.

We go through the most suitable solution with you on site and prepare an investment plan. You can obtain the result immediately by entering the following data in the calculator:

- Number of format changes per day or week
- Number of axes to be adjusted
- Set-up times for the format change in minutes
- Downtime costs for the machine or plant
- Personnel costs for the machine or plant operators

We would be pleased to calculate the cost-effectiveness for you, talk to us!

Payback period:		28 Production days
Entries:		
Costs for the PowerDRIVE-System		Entries
Costs, PowerDRIVE (total project costs)		7.000 €
Actual set-up time parameters		Entries
Manual set-up time (total time including the running-in time)	min	8
Employees required for the change-over		1
Average costs per employee	€/h	45 €
Average loss during production stop	€/h	2.500 €
Number of production days per week		5
Average number of change-overs per production day		1
Set-up time for automatic change-over with PowerDRIVE-System		min
		2

Results:	
Costs for manual change-over	
Costs per minute, manual change-over	42 €
Costs per manual change-over	339 €
Costs, manual change-overs per production week	1.697 €
Costs with the PowerDRIVE-System (not including investment costs)	
Costs per minute, automatic change-over	42 €
Costs per automatic change-over	85 €
Costs, automatic change-overs per production week	424 €
Cost difference (manual - automated)	
Per production day	255 €
Per production week	1.273 €
Per production month (production week x 4)	5.090 €
Per production year (saving)	61.080 €

ROI diagram

— Costs with the PowerDRIVE-System — Costs without the PowerDRIVE-System

ROI = Return on Investment

The result from the ROI calculator for a practical example shows that a return-on-investment is achieved after only 28 production days!

PowerDRIVE-Retrofit – simply integrated

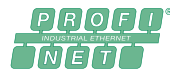
Expand your existing machine control system using our know-how

With the PowerDRIVE-System, Lenord + Bauer makes it possible to modernise a complex plant. If the system is to be integrated into the existing control system architecture, as a rule, the switch cabinet must also be modified or extended. In some cases the program in the plant control system will need to be modified.



If required, we will integrate the system into your control system. Irrespective of whether the issue is minor modifications or complex plant control systems, our specialists will program a suitable software solution for your application. As only with the optimal interaction of the hardware used and the specifically customised software will you obtain optimal results in the production process.

We have many years of experience in programming control systems from well-known manufacturers, such as Siemens (STEP 7 and TIA-Portal), Schneider (ELAU), Rockwell Automation, Beckhoff, Bosch Rexroth, B&R or Wago. Our PowerDRIVE-System supports almost all common bus systems.



We prepare a proposed solution and take over the planning and project management for you. During this process we optimise your machine or plant taking into account all relevant aspects such as efficiency, availability and reliability. We are available to assist you from planning and configuration, through implementation and monitoring of the measures, to acceptance. Of course, we also accompany you at the start of production and continue to provide practical help until the machine or plant is running optimally.



Utilise our expert knowledge and profit from our extensive range of consulting and other services!



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