



CONTROL SYSTEMS

- > CONTROL UNITS
- > SAFETY ENGINEERING
- > DISPLAYS
- > SOFTWARE AND BUS SYSTEMS
- > CONTROL DEVICES



CONTROL UNITS

COMPACT, INTUITIVE AND PRACTICAL

During the development of control units, Wölfe is able to pursue precise planning and implementation of all of our customer needs. We always apply the best solutions, to design the controls to be as simple as possible. This produces intelligent and reliable control units that are pleasant to the touch.



ASSEMBLY DEVICE FOR ELECTRONICS PRODUCTION

AN OVERVIEW OF SAMPLE SOLUTIONS

Our extract of implemented customer solutions will provide you with a brief overview of our range of services in the area of control units:

01



CONTROL UNIT PORTABLE FIRE PUMP

- > Integrated control device with CAN-Bus (Automotive CAN/Fire CAN)
- > Aluminium housing with operating membrane
- > Combination of analogue and digital displays

02



CONTROL UNIT FIRE ENGINE

- > 1 m large injection-moulded casing in RAL 3000 (fire engine red)
- > Customisation modules and order-related printing of the operating membrane

03



CONTROL UNIT MANUAL BALER

- > CAN-Bus with customer-specific protocol
- > Plastic enclosure per IP6K9K
- > Membrane keypad with function and background lighting (EL)

04



CAN INPUT MODULE WHEEL LOADER

- > Aluminium cover
- > Tactile switch with individual labelling
- > CAN-Bus with customer-specific protocol

CLEVER. EFFICIENT. CREATIVE

DISPLAYS

CLEARLY LAID-OUT, PRECISE AND UNIVERSAL

Displays need to provide vehicle drivers a reliable overview of the functions of their vehicle or the machine at all times. All display types can be designed for requirements arising due to exposure to extreme environmental loads during use. In this way, we provide the ideal results. Regardless of the size and complexity of the task, we offer you a customised overall solution for your application.

AN OVERVIEW OF SAMPLE SOLUTIONS

Our extract of implemented customer solutions will provide you with a brief overview of our range of services in the area of displays:

01



TFT DISPLAY WHEEL LOADER

- > Windows® Embedded CE
- > Integrated 16-bit controller device
- > Standardised front end with LVDS interface
- > Boot loader and diagnostics

02



LCD DISPLAY WHEEL LOADER

- > Customised LCD
- > LED back-lighting with high illuminating power
- > Aluminium cover with completely matte glass

03



ANALOGUE DISPLAY WHEEL LOADER

- > Analogue rotating instruments
- > Simple and proven technology
- > Low-cost

CONTROL DEVICES

RELIABLE, ROBUST AND EASY TO INTEGRATE

Control devices are electronic modules and the basis of vehicle electronics. Control devices provide the hardware to control, regulate and monitor vehicle functions and components. Wölfe offers a high-performance product range in this area, and is your point of contact for customised applications.



TEST SYSTEM FOR ELECTRONICS MANUFACTURING

AN OVERVIEW OF SAMPLE SOLUTIONS

Our extract of implemented customer solutions will provide you with a brief overview of our range of services in the area of control devices:



01

CONTROL UNIT FORKLIFT

- > Die-cast housing
- > 16-bit architecture
- > CAN- and LIN-Bus



02

CONTROL UNIT EXCAVATOR

- > Modular extruded aluminium enclosure (shown without enclosure)
- > 32-bit architecture
- > CAN-Bus



03

CONTROL UNIT HYDROGEN TRUCK

- > Modular functional design
- > 32-bit architecture
- > 2x CAN-Bus



04

CONTROL UNIT FIELD SPRAYER

- > Die-cast housing
- > 32-bit architecture
- > 2x CAN-Bus
- > AUTOSAR®

CLEVER. EFFICIENT. CREATIVE

SAFETY ENGINEERING

RELIABLE, SOPHISTICATED AND STANDARD-COMPATIBLE INTEGRATION

The machine manufacture is obligated to complete risk and hazard assessments for their components. This enables potential risks that could occur during operation of the machines to be determined and assigned to a risk level. This classification be used to derive an appropriate Performance Level (PL) in accordance with EN ISO 13849-1 for the controller or its parts. Wölfe is the ideal partner for the development and production of custom solutions that are also suitable for retrofitting.

AN OVERVIEW OF SAMPLE SOLUTIONS

Our extract of implemented customer solutions will provide you with a brief overview of our range of services in the area of safety engineering:



01

SAFETY MONITORING ROAD PAVER

- > Optional module for retrofitting
- > Independent of the existing controls
- > PL d of EN ISO 13849-1



02

QUICK COUPLER CONTROL UNIT EXCAVATOR

- > With integrated safety control device
- > Stand-alone device
- > PL d of EN ISO 13849-1



ASSEMBLY LINE FOR ELECTRONIC ASSEMBLIES

CLEVER. EFFICIENT. CREATIVE

SOFTWARE AND BUS SYSTEMS

SAFE, INTELLIGENT AND NETWORKED

Software expertise is becoming the central discipline for functional scope, convenience, safety and innovation in vehicles. In order to support efficient and safe development processes, high-level software development in particular is model-based on MATLAB®/Simulink® and uses standard operating systems such as Autosar® or Codesys®. With over 25 years of in-house software development experience, we have accumulated extensive specialist and industry expertise and we have developed this area into a core competence.

The challenge of future E/E architectures lies in also mastering the increasingly powerful data streams. Data is generated by sensors, exchanged between control devices and must be delivered to actuators. Different bus systems exist for the different requirements of data transmission – such as transmission speed, availability, prioritisation, etc. With our development environments and various tools, we can also actively assist with commissioning on the vehicle and with fault analyses.

OVERVIEW OF THE USE OF MODERN SOFTWARE TOOLS AND PROTOCOLS



TOOLS

- > Codeworrier
- > Keil
- > Multisim
- > MATLAB/Simulink
- > INCA
- > ISOLAR
- > CANoe
- > CANalyser
- > E3.Series Formboard & Cable



LANGUAGES

- > C, C++, C#, Assembler, Java
- > STEP7, Codesys, Logo



OPERATING SYSTEMS

- > AUTOSAR® 4.3
- > OSEK-NM
- > Windows Compact CE
- > Wölfe OWN



PROTOCOLS

- > UDS, XCP, FireCan, CANopen, J1939, ISOBUS
- > Customer protocols: Liebherr, Wirtgen, Ford, Ziegler, Linde, and more besides

THERMAL SYSTEMS / CONTROL SYSTEMS / E/E SYSTEMS / SPECIAL CABS

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