



INDUSTRY

APPLICATION EXAMPLE

## Modular gateway for Edge2Cloud communication

On customers behalf, HEITEC has designed a compact multifunctional system that functions simultaneously as a control unit, gateway and output unit. The device is suitable for connecting various analogue devices, sensors and controllers as well as connectivity to the cloud. Many communication interfaces and protocols as well as fieldbuses such as PROFIBUS or PROFINET are supported, so that required data is accessible at any time. The system enables the connection to various cloud solutions such as IBM Cloud, Microsoft Azure and others, as well as the connection to MES systems on site.

In the project, mechanics, hardware and electronics were developed according to the customer's wishes and implemented in the corporate design. For use in harsh industrial environments, the gateway had to meet demanding conditions and was designed to be vibration and shock resistant in accordance with existing standards. Interference with the surrounding hardware was excluded by means of IEC certification. Electromagnetic immunity and electromagnetic interference limits were proven in extensive tests and achieved, as was RoHS conformity. In addition to EMC, increased attention had to be paid to the isolation of signals and channels for a defined power

consumption. With a weight of only 1.5 kg, the system is very light and suitable for wall or rail mounting, and with its small dimensions it is also very compact. The connectors have been designed so robustly that 10,000 mating cycles per slot can be achieved, yet they remain easy to maintain.

Modularity and flexibility are emphasised not only by the processor architecture and the function as a gateway, but also by the update options: The four built-in analogue interface modules can be exchanged for other boards. The memory can also be expanded if required. The system runs with a Linux-based operating system and is operated via a 24 VDC power supply. Unlike conventional systems of this type, the unit has an integrated display. The robust housing is made of brushed, colourless passivated stainless steel and can therefore withstand any corrosive environment.

HEITEC hereby offers its customer an all-in-one complete solution for a modern factory, as required for Industry 4.0.

## Customised all-in-one complete solution



Top view with connections for network, fieldbuses and digital/ analogue inputs.



PCB of the unit with a view of the four interchangeable interface boards.

## Technical Summary

- › SoC Xilinx Zynq-7000, Dual-Core ARM Cortex A9, FPGA Xilinx Artix-7
- › 512 MB RAM, 64 MB QSPI Flash memory
- › 1 GB DDR3L SDRAM (expandable)
- › 2 x 10/100/1000 Mbit/s Ethernet
- › 8x sensor ports (up to 2 MHz)
- › 16x digital inputs (max. 24 V)
- › 16x digital outputs (max. 24 V, max. 0.8 A)
- › W x H x D: 222 x 122 x 82 mm at 1.5 kg

## Customer Benefits

- › Realisation of the customised enclosure in the corporate design
- › Implementation of the standards:
  - CE conformity
  - EN 55016-21/3
  - EN 61000-4-2/-3/-4/-6/-8
  - DIN EN 60068-2-6/-27
- › Prototype development and production from a single source
- › Support and development throughout all evolution cycles
- › High shock and vibration resistance
- › High user-friendliness due to display
- › Robust housing made of brushed, passivated stainless steel

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