

XIOS UC 1

DATA SHEET

Description

The HEINZMANN modular universal controller XIOS UC 1 presents an entirely new generation of controller.



Each XIOS consists of a high performance main board and additional I/O boards. The main board provides high CPU power, large DRAM and FLASH memory as well as modern communication interfaces. The I/O boards are small in size and are configurable by software. They can be attached in different number and type to the main board.

A FPGA logic chip developed by HEINZMANN takes control of all I/O functions, leaving more computing power to the CPU for PLC functions or processor-intensive control tasks.

XIOS UC 1 enables customers to develop their own control functions on the basis of CoDeSys* (IEC 61131-3) or MATLAB™/Simulink*. This allows to build up extensive and flexible control functions. The proven and reliable real-time operating system (RTOS) guarantees stable performance.

XIOS is also applicable to the field of alarms and successfully used for monitoring. Optional data logging functions allow individual recording of relevant system data.

The basic version of XIOS UC 1 is the carrier module. It comes equipped with 2 speed inputs (Hall-type) or digital input, 11 analogue or digital inputs, 2 digital outputs and 4 sensor supplies. 5 further I/O modules can be attached to it. Each of them is able to serve up to 4 I/O channels. Additionally, one more expander module offering 8 analogue or digital inputs, 2 digital inputs, 2 digital outputs, 2 inductive speed inputs or digital inputs can be attached. It provides connection of 6 further I/O modules.

Input channels offer to be configured by software as analogue, digital, temperature or frequency inputs. Output channels can be configured as analogue, pure digital, PWM high-side, low-side, half-bridge or full-bridge outputs. They are available electrically isolated or non-isolated.

For high-bandwidth applications e.g. image processing or intelligent I/O PMC mezzanine I/O boards based on the PCI standard can be designed.

Ethernet, CAN, RS-232 and RS-485 are supplied as communication interfaces, USB for peripherals. XIOS is reverse battery protected.

All XIOS I/Os are short-circuit proof and offer fault diagnosis. Connections to XIOS are simply established via quick-set terminals.

Features

Modular & flexible

PLC functionality (CoDeSys*)

32 bit processor

Great variety of input and output types

I/Os individually configurable by software

Scalable number of I/Os

Diagnostic functions for error detection implemented

Alarms, monitoring and data logging

MATLAB™/Simulink* interface

One high-speed PMC IEEE 1386 (PCI) I/O board attachable

Speed & turbine control

Up to 3 actuators controllable

Custom-built module types with short-term period of development obtainable

Application range

- Alarm management & monitoring
- Engine & turbine management
- Gas engine management
- Generator management & cogeneration
- Construction engines
- Any kind of system requiring scalable I/O functionality

Technical data

Processor	32 Bit 264 MHz processor, system supervised by watchdog
Memory	32 MByte SDRAM, 133 MHz 16 MByte Flash 0.5 MBit serial error ROM 256 MBit data logger ROM
Interfaces	2× electrically isolated CAN 2× 10/100 MBit Ethernet 1× RS-485 overvoltage protected 1× RS-232 USB (for peripherals only)
I/O extension options	up to 11× I/O modules for additional inputs and outputs, 1× PMC PCI module for high-speed or intelligent custom-built I/O functions
Monitors	3 status LEDs
Software	MATLAB™ / Simulink* / CoDeSys*
Power supply	16 ... 32 VDC
Power consumption	approx. 350 mA (at 24 VDC)
Ambient temperature	-40 ... +70 °C
Degree of protection	IP20
Dimensions	270 × 240 × 48 mm



Carrier module with expander module and 2× I/O module



IP20

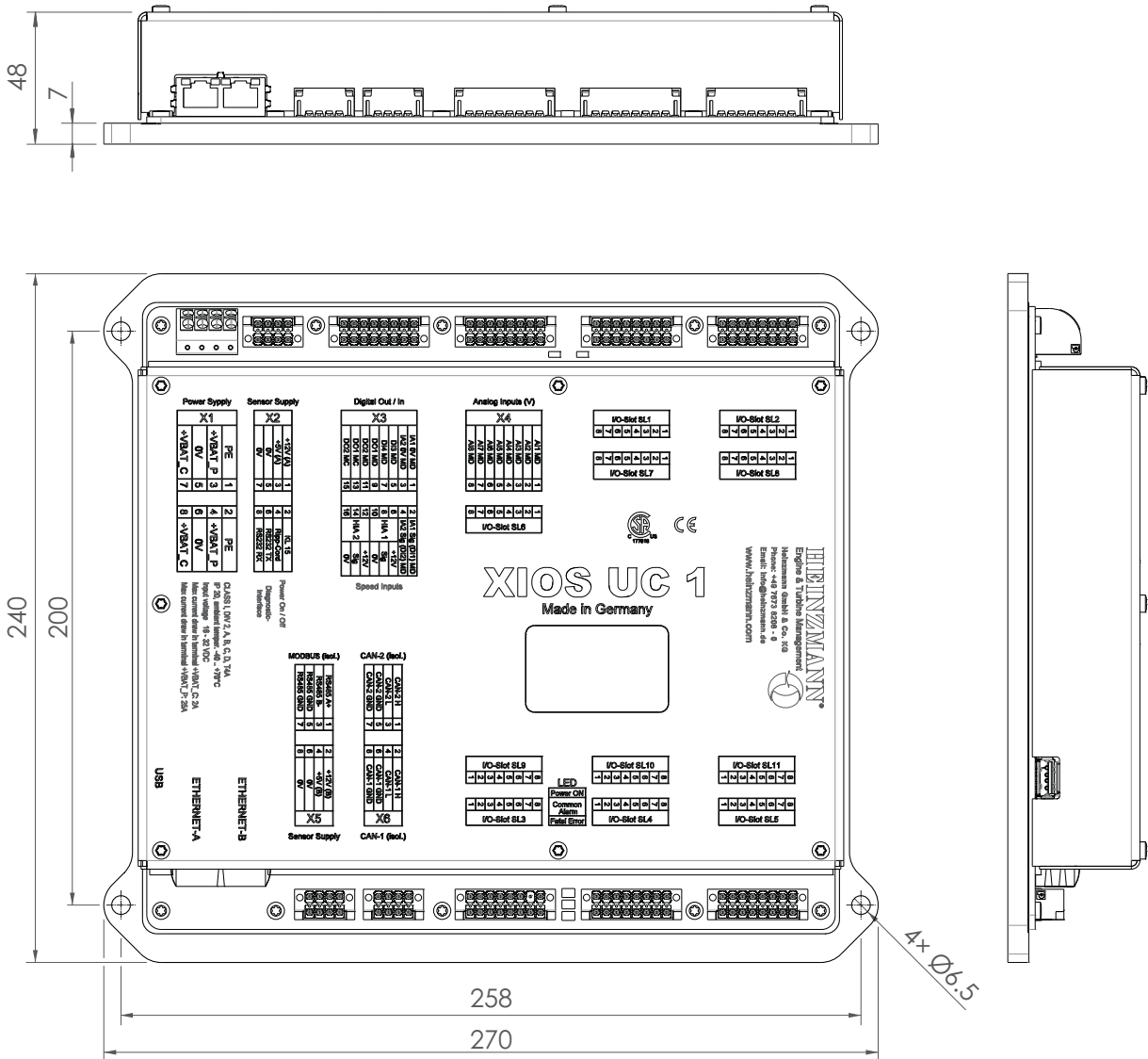
Inputs/outputs

Module type	Function	Extension options
Main board (MC)	up to 11× analogue 0 ... 5 V/10 V or digital input 2× speed input (Hall-type) or digital input 2× digital output, max. 4 A 4× sensor supply (5 and 12 VDC)	5× slot for module type MA 1× slot for expander board MD
Expander board (MD)	8× analogue 0 ... 5 V/10 V or digital input 2× digital input 2× digital output, max. 4 A 2× speed input (inductive) or digital input	6× slot for module type MA
Extension I/O boards (MA)	Each configurable by software, dimension: 45 × 45 mm; plug-in mounting	
A1*	2× thermocouple amplifier electrically isolated, (J/K/E/R/S/B/N/T/L) configurable gain and offset	
A2	4× analogue or digital output 0 ... 5 VDC (25 mA) or 0 ... 8 VDC (11 mA) 0/4 ... 20 mA digital output: max. 1 A PWM controlled (0 ... 100 %) high-side, low-side voltage and current monitored	
A3	4× analogue or digital input 0 ... 5/10/36 VDC 0/4 ... 20 mA digital input: static or frequency temperature input: Pt1000, Pt200, Pt100 1× sensor supply 5, 8 or 12 VDC 1× sensor supply Vcc optional	
A4	2× analogue or digital input, electrically isolated 0 ... 5/10/36 VDC 0/4 ... 20 mA digital input: static or frequency temperature input: Pt1000 2× sensor supply (5 VDC, 50mA)	
A5	2× analogue or digital output, electrically isolated 0 ... 5 VDC (2.5 mA) 0/4 ... 20 mA digital output: low-side (photo-coupled), 60 VDC/40 VAC, 400 mA static optional: 400 VDC/280 VAC, 100 mA	
A6	2× analogue output, electrically isolated 0 ... 5 VDC (2.5 mA) 0/4 ... 20 mA voltage and current monitored	
A7*	6× digital input up to 32 VDC	
A8	up to 2× digital output, half bridge current read back for control-loop applications PWM controllable 0 ... 100 % PWM frequency: up to 1.5 kHz thermal shutdown	
A9*	1× full bridge output (4Q) up to 4 A static current suitable for various HEINZMANN actuators current read back for control-loop applications PWM controllable 0 ... 100 % PWM frequency: 126 Hz ... 20 kHz	

Custom-built module types can be offered with short-term period of development.

* Each extension board of type A1, A7 or A9 applied to a MC or MD board will reduce the number of the 11 analogue or digital inputs of the MC board by one.

Dimensions



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