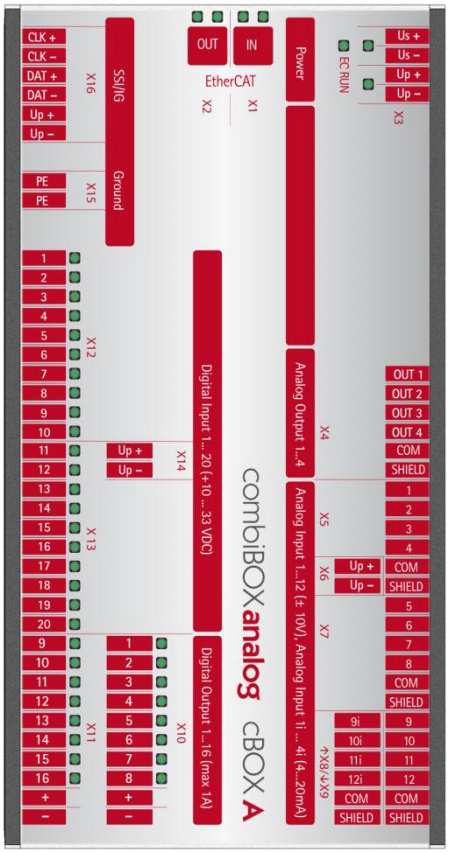
Combibox analog Cbox A

System Description



The all-rounder Combibox A is basically designed for three applications:

1. **Cbox A as a passive BUS terminal**

   Cbox A is a platform for high-speed automation-Systems. Based on an ultra-fast BUS cycle time of 50µs provides the fieldbus terminal with an EtherCAT-Slave-Interface analog and digital Inputs / Outputs.

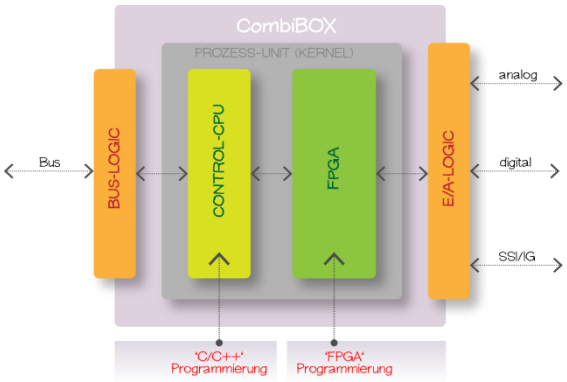
   On the contrary to a standard PLC - which operates at a cycle time of 1ms – realizes the Cbox A a BUS cycle time of 50µs, thus a 20 times faster and therefore a 20 times more precise evaluation of the process as conventional PLC systems.
   Real time software solutions are realized e.g. with the Soft-PLC TwinCAT.

2. **Cbox A as an active PLC-Sub-System**

   Cbox A suits optimal as a high-speed PLC-Sub-system, to collect, evaluate, actuate and control stand-alone analog and digital process data and provides the process parameters additionally via an EtherCAT-Interface to a host system.
   Due to the high-speed internal processing of the I/O-Signals via CPU <50µs and FPGA <1µs are cycle times realized which are only a fraction of the BUS cycle.

3. **Cbox A as an Embedded System**

   The Cbox A is also a stand-alone system for individual test- / control-applications available. Programming with C- programs for the ARM-Controller or with VHDL for the FPGA. Development Kits for individual applications are available.



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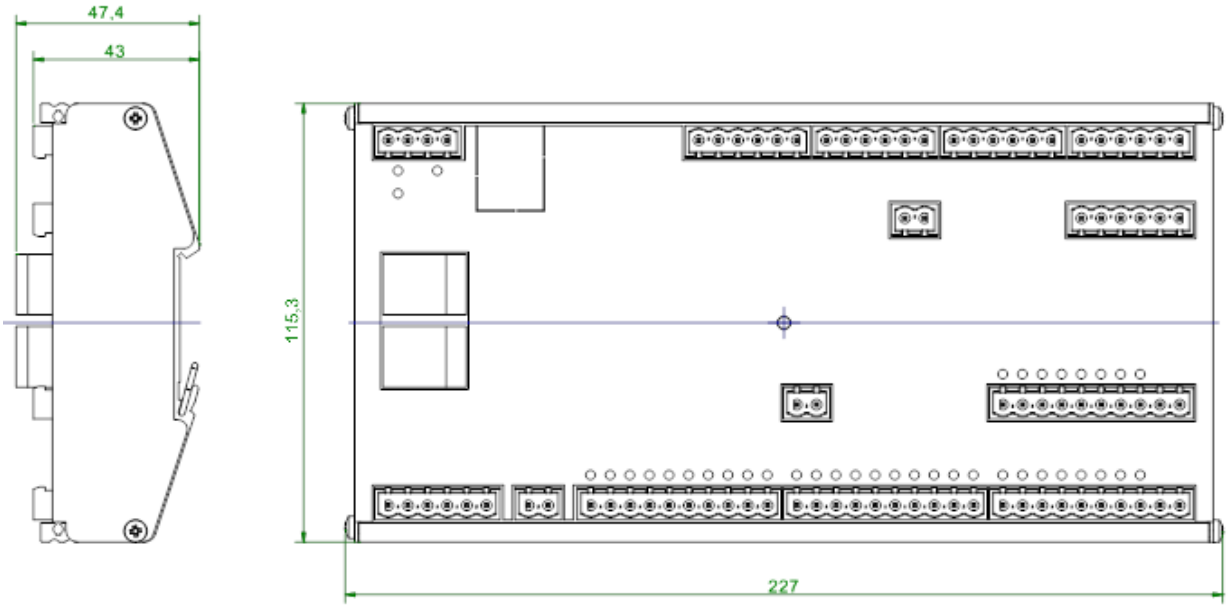
System Features

- 12 analog inputs
  - Measuring range ±10V|±5V
  - 4 inputs selectable for current 0..20mA|4..20mA
  - Low pass filter programmable
  - Oversampling
  - 16 Bit resolution
- 4 analog outputs
  - Voltage range ±10V
  - Oversampling
  - 16 Bit resolution
- 20 digital inputs
  - Debouncing programmable
  - Flag counter
- 16 digital outputs
  - Error diagnostic
  - Excess temerature detection
  - Watchdog-Function
- SSI / IC mit Master | Slave | Encoder Function
- Modbus compatible
- EtherCAT - Slave
- Safety class IP 20



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Technical Data	
US | UP	
Power supply Us/Up	24 VDC ± 10 %
Current consumption w/o load	< 150 mA at 24 VDC (Us)
Analog Inputs 1..12	
Voltage range	± 10 V
Current meas. (9..12)	0..20mA|4..20mA
Resolution	16 Bit
Sampling rate	100 KSPS | 200 KSPS internal
A/D converting time	5 µs
Analog Outputs 1..4	
Voltage range	± 10 V | ± 5 V
Max. current	30 mA
Resolution	16 Bit
Output rate	100 KSPS | 500 KSPS internal
D/A converting time	1,6 µs
Digital Inputs 1..20	
Log „1“	9 - 30 V
Log „0“	0 - 5 V
Max. Voltage	30 VDC
Rise Time	< 0,5 µs
Fall Time	< 0,5 µs
Digital debouncing	0 - 65535 µs
Flag counter	8 Bit
Digital Outputs 1..16	
Current (nominal)	0..1000 mA
Max. current 2 outputs per group (4)	2,6 A
Output level X8 / X10 / X12	8 - 27 V | 8 A
Rise Time	37 µs
Fall Time	100 µs
Error diagnostic	2 Outputs = 1 Bit
SSI|IC Input	
Power supply	Level by UP (X3.3,X3.4) max. 300 mA
Max. clock rate SSI Master	125 | 250 | 500 | 1000 kHz
Max. clock rate SSI Slave	100..1000 kHz
Signal level	RS422 | RS485 Differentiell 5V
Functions	Master | Slave | Encoder
EtherCAT IN|Out	
Field-bus	EtherCAT 100 MBit/s, Full Duplex
Medium	CAT-5e cable, shielded
Mechanic	
Dimensions	220 x 115 x 40 mm (L x W x H)
Installation	Din-rail EN35
Weight	700 g
Safety class	IP 20
Vibration proofing X/Y/Z | IEC68 part 2-6	10 G
Part-No.	193110010000

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