

WBox S103

Universal Industrial Control Unit

Overview

The WBox S103 is a universal industrial control unit for building automation, HVAC and industrial IoT. It combines integrated I/O (4 digital outputs, 4 digital inputs, 1 analog output, 1 analog input and a 1-Wire bus), a galvanically isolated RS-485 serial interface and 1 GB of RAM in a compact aluminium DIN-rail enclosure. Its real-time Direct Switch function, built-in web server and REST API make it equally suited to local control and to acting as a multi-protocol gateway (KNX, Modbus TCP/RTU).



Features

- Integrated I/O: 4 × digital inputs, 4 × transistor outputs, 1 × analog input, 1 × analog output, 1-Wire bus
- 1 × RS-485, galvanically isolated, for expansion and communication modules
- 1 × 10/100 Ethernet, 4 × USB (Wi-Fi, 3G, ...)
- Wi-Fi + Bluetooth (access point / client)
- Direct Switch function — rapid input response (tens of μ s); identity, negation, toggle
- Watchdog for control-system monitoring; RTC with backup up to 7 days
- Multiple protocols: KNX Tunneling/Multicast/USB, Modbus TCP/RTU master/slave, SMTP
- REST API and built-in web server for application display
- 4 × user-configurable LEDs
- Linux operating system; compact DIN-rail installation

Specifications

Hardware System	
CPU	4 × 1.2 GHz
Memory	1 GB RAM
Wireless	Wi-Fi + Bluetooth (access point / client)
Operating system	Linux
Communication	
Ethernet	1 × 10/100 Base-T
Serial	1 × RS-485 (9.6-115 kbps), 1 × 1-Wire
Galvanic isolation	RS-485: yes · 1-Wire: yes

USB	4 × USB
Digital Inputs	
Channels	4 × 1 (common DIGND)
Functions	Signalization, counter, Direct Switch
Operation range	5-24 V DC (log.0 max 3.5 V, log.1 min 4.5 V)
Input resistance	6 200 Ω · delay 20 μs / 60 μs
Digital Outputs	
Channels	4 × 1 (common DOGND), transistor
Additional functions	PWM, frequency
Switchable voltage	5-50 V DC
Switchable current	750 mA / 1 A (max. total DO1.1-1.4: 1 A)
Switching speed	Typ. 130 ns / 20 ns; max. 200 kHz / 8-bit
Analog Input / Output	
Analog input	1 × (AGND): 0-10 V / 0-20 mA, 12-bit, 10 μs
Analog output	1 × (AGND): 0-10 V / 0-20 mA, 12-bit, 1 ms
Power Supply	
Rated voltage (SELV)	24 V DC
Voltage tolerance	-15% / +25% (20.4-30 V DC)
Power consumption	Typ. 3 W, max. 12 W
Internal protection	Yes
Physical & Environmental	
Dimensions (W×H×D)	72 × 90 × 59 mm
Weight	300 g
Ingress protection	IP20 (IEC 529)
Operating temperature	0 °C to +55 °C
Storage temperature	-25 °C to +70 °C
Dielectric strength	In accordance with EN 60950
Mounting	35 mm DIN rail (horizontal), distribution box
Connection	Pluggable terminal blocks, wire gauge max 2.5 mm ²
Standards Compliance	
EN	EN 6095-1 ed.2, EN 61000-6-3 ed.2, EN 55014-1 ed.3, EN 55022 ed.3

Directives

2006/95/EC, 2004/108/ES, 2014/35/EU, 2014/30/EC
