

WebHMI –IoT Gateway mit integrierter SCADA Funktionalität

Product group: IoT

Product name: WebHMI

AVIBIA WebHMI

WebHMI –Monitoring solution - Multiprotocol Interface – SCADA - IoT Gateway in one.

WebHMI is connected to a controller, a measured value acquisition system or a smart sensor system via a digital interface. The device can visualize measured values locally or decentral and transfer data to the cloud in parallel. WebHMI has an integrated, web-based SCADA system with extensive operating and monitoring functions and also combines functions of a (W)LAN router and edge devices. Diagrams can be displayed with any terminal device and browser. The system is connected via the LAN interface or directly wirelessly via the integrated WLAN. The WWAN interface supports 3G/4G modems.



Multi-protocol support

WebHMI enables users to set up uniform remote monitoring, supervision or control systems very easily and without great effort. The coupling to an existing control system is done via a bus connection. The list of supported protocols is long. The WebHMI data gateway can communicate with any industrial devices via the following standard protocols.

- **Modbus RTU/ASCII/TCP,**
- **Siemens S7 Communication, Siemens PPI,**
- **Mitsubishi MELSEC, Delta Electronics DVP,**
- **Allen-Bradley DF1, 1-Wire,**
- **OWEN, Carel Easy, BACnet IP,**
- **Individual protocols**

Logger memory and LUA scripts integrated

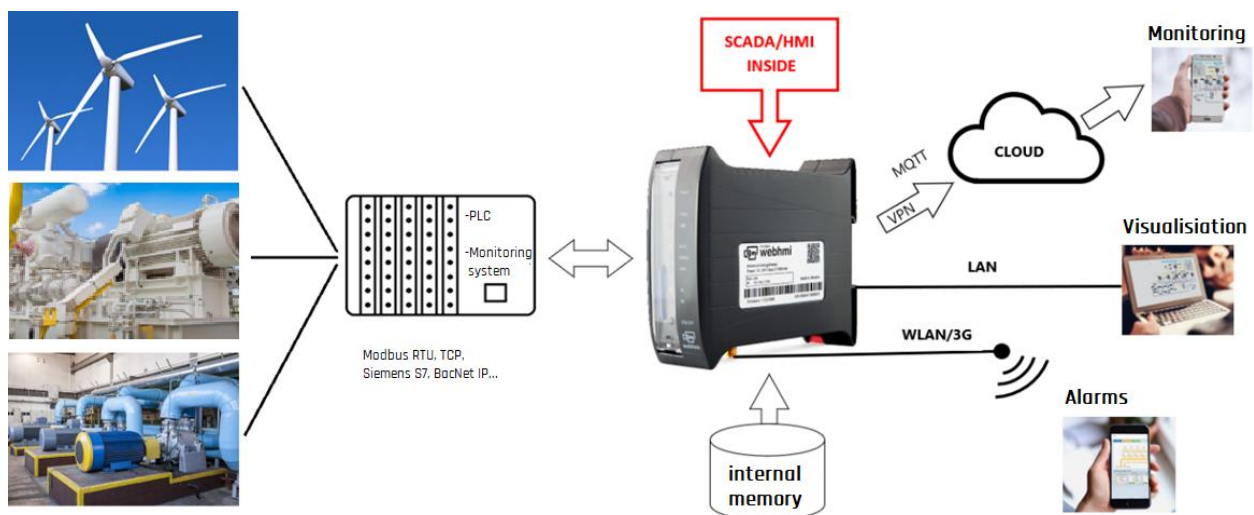
An internal data memory (up to 32 GB) makes WebHMI a self-sufficient data logger with convenient access to historical measured values with intuitive web trends - ASCII export included. With LUA scripts, batches, log adjustments or other automation functions can be easily implemented.

Quickly configured and flexibly visualized

Configuration and chart creation is very easy and can be done without much effort. Whether in the local network or on the Internet, project development does not require long familiarization or extensive training. Thanks to the online configuration mode, the device is ready for use in no time at all.

Simple license model

The license model is very simple in order not to limit the application possibilities and to allow the users the greatest flexibility. There are no limitations in terms of number of users and measuring points. An extensive and well documented API allows direct communication with individual user applications.



WebHMI Cloud or PRIVATE Cloud connection.

At the same time, WebHMI offers edge computing functionalities and can be connected to a private cloud via IoT interfaces. For this purpose, IoT protocols such as MQTT (with broker) or Modbus TCP have been integrated.

For distributed systems, higher-level access can also be provided via the WebHMI Cloud. In the WebHMI Cloud, the decentralized WebHMI systems are combined and visualized across the board in diagrams or on maps. Reports can be generated automatically in the cloud. The WebHMI Cloud is offered as an optional service (server located in Germany).

Functions

- Direct control and monitoring via the web - on a local network or the Internet, from any platform - mobile, tablet, laptop, computer, etc., simultaneously from different locations, with no limit on the number of users.
- The online development environment, is ready to use immediately after development. Turn on and start with no limit on the number of measurement points or restrictive license terms.
- Extensive, well-documented API for direct communication with user applications.
- Support for common industry protocols, with the ability to use different protocols simultaneously on the same physical line.
- WebHMI can also be used to monitor controllers or distributed systems and transmit the data to higher levels or to the cloud.



Simply connect WebHMI with the controller

... and visualize measured values

Visualization

Integrierter Interface-Editor: Integrierter Editor, der in einem Standard Webbrowser läuft ermöglicht es, individuelle Visualisierungsschaubilder wie in einem HMI zu erstellen. Funktionen wie im SCADA System: Textelemente, Vektorgrafiken, Animationen, Trends, historische Grafiken, Nachrichten, Texteingabefelder und Elemente der Rezeptursteuerung.

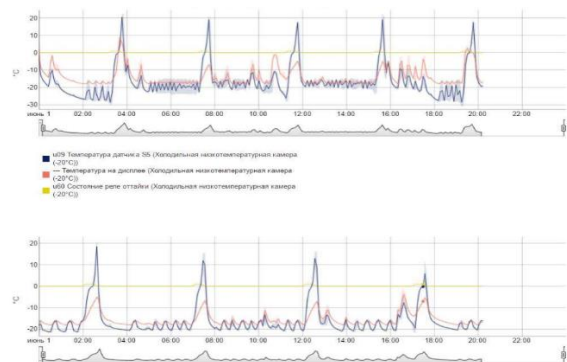
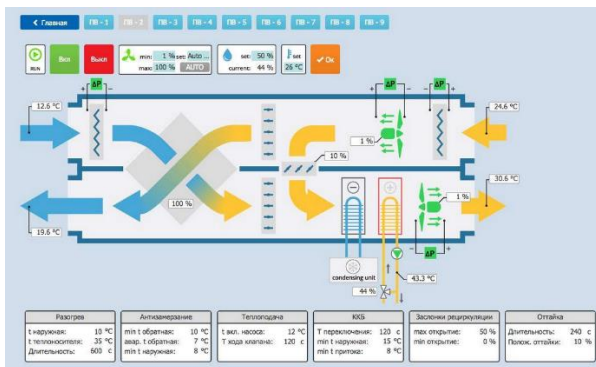
Access control: different levels of access can be granted to different users. as well as access restrictions to specific dashboards (screens).

Communication

Protocols supported: Allen-Bradley Ethernet/IP & DFI, BACnet IP, Carel Easy, Delta Electronics DVP, DLMS/COSEM, Mitsubishi Melsec, M-bus, Modbus RTU/ASCII/TCP, OWEN, Siemens PPI, Siemens S7 communication Iso-Over-TCP, 1 -Wire.

"Multi-protocol" function: the ability to work simultaneously with several protocols: on the same physical line.

User-defined protocols: for non-standard or unsupported devices, the user can add program code to send and receive protocol telegrams himself. All this by means of a convenient scripting language.



Optimization of data communication: There are possibilities to set different priorities. If data should be received and processed quickly or block data should be read, the implementation can be configured very easily.

Gateway function "Any-To-Any Protocol": By using the integrated script language, data exchange between different protocols can be implemented easily and the WebHMI becomes a smart protocol converter with visualization functions.

Versatile Integration Options

Custom API: Through API calls, WebHMI can directly exchange data with business software or third-party software, other websites, etc.

ModBus TCP Server: A group of tags can be retrieved from external clients, such as SCADA systems, PLCs or another WebHMI, via Modbus TCP protocol for data cross exchange.

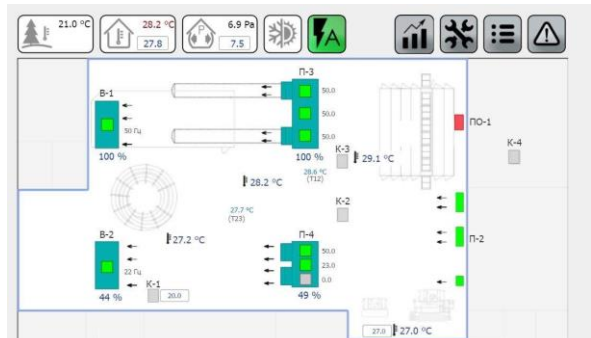
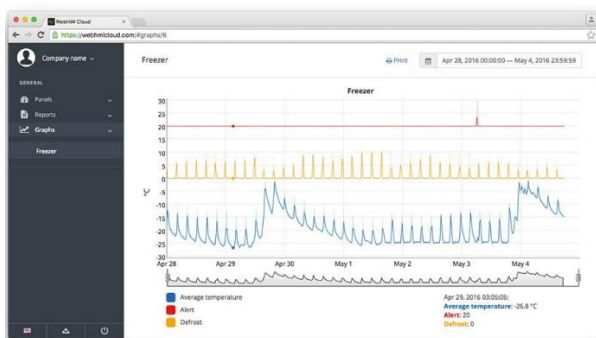
HTTP requests: WebHMI allows to interact with other systems by controlling the execution of HTTP requests through the user scripts.

Control functions

User scripts: The user can write functions in the popular scripting language Lua, thus integrating complicated algorithms or signal processing functions.

Alarming

Alarming and messaging via e-mail, SMS or telegram messenger



Network capabilities

Built-in features of the router: routing firewall NAT. and other features allow WebHMI to be integrated into any network infrastructure without the need for additional network devices. All in one device.

Wi-Fi interface: this can work simultaneously in different networks, as a client. and as an access point, WPS mode is also supported.

VPN support: easy implementation of remote access without the use of "white IP addresses".

NTP server/client: time synchronization via NTP protocol.

Built-in support for 3/4G modems. Modem re-initialization by disabling USB power is also supported.

Remote access: user can operate connected devices. access WebHMI service and development tools via virtual COM port and Ethernet (with possibility of forwarding via gateway).

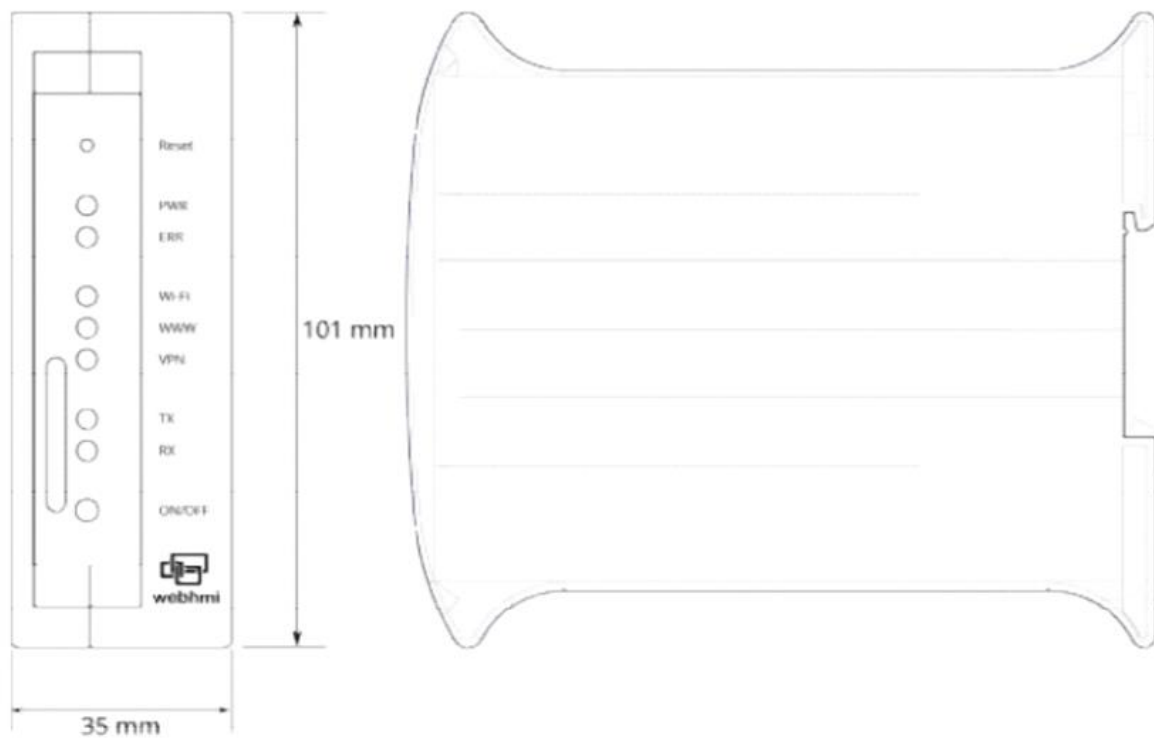
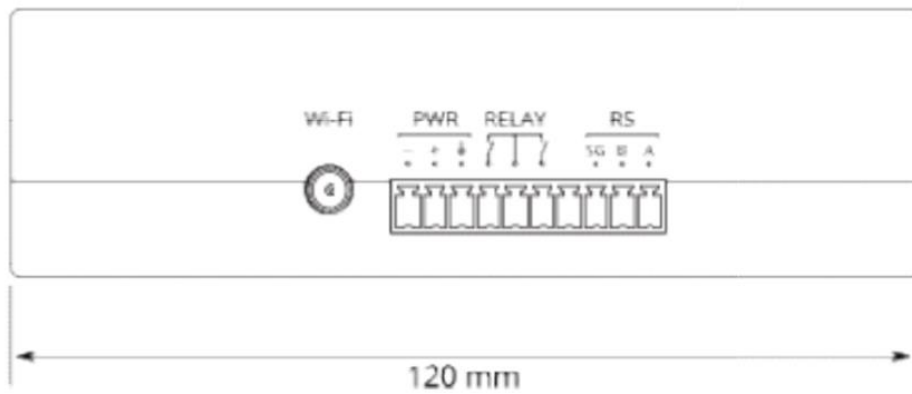


Applications

The applications for WebHMI are as extensive as the functions. Listed below are just a few examples:

- Web-based vibration and process monitoring of machinery and equipment
- Remote monitoring of machinery, pump stations, fans,
- Monitoring of automated production plants
- Remote diagnosis and alarming of production processes etc...
- Visualization of production processes for management, shift supervisors and employees

Dimensions



Technical data

Platform	Super compact, no fan, MIPS architecture, embedded Linux
Data storage	Industrial SD cards with up to 32 GB
Interfaces	2 x Ethernet 100BASE-T, RJ45 with galvanic isolation, ESD 3 kV
	1 x WLAN 802.11 b/g/n (100 mW transmit power)
	1 x RP-SMA antenna connector
	1 x RS-485, "multiprotocol" mode, 250/921 kbit/s*, galvanic isolation 2500 V, ESD - 8 kV
	1 x USB 2.0 - load capacity up to 500 mA, regulated supply, ESD protection according to IEC 61000-4-2 step 4: 15 kV (air discharge) - 8 kV (contact)
	Additional ports: RS-232/422/485, M-Bus, 1-Wire etc. via USB adapter
Supported modems	3/4G, CDMA, GSM, EDGE
Input/output	2 x static SSR relays (125 mA, 24 V)
Clock	Real-time clock with backup battery (CR3032)
	NTP server and NTP client
Watchdogs	Yes (system and communication)
Response speed	Adjustable polling time (from 5 ms).
	Configurable data display frequency in web interface (from 20 times/sec.)
Power supply	100...500mA@24V (18..32V)
	Integrated UPS for 120 minutes battery life
Housing material:	ABS with C-profile (top hat rail)
Degree of protection	IP40
Dimensions	(HxWxD) 101 x 35 x 120 mm.
Weight	300 g
Temperature range	0 ÷ 50°C
Compliance with standards	EMC Directive 2014/30/EC with the following agreed standards:
	EN 61000-6-3: 2007/A1: 2011/AC: 2012
	EN 61000-6-3: 2005/AC: 2005/AC
	EN 60950-1: 2006/AC: 2011
	PGU (State Standard of Ukraine) CISPR 22: 2007, PSU CISPR 24: 2008 (CISPR 24: 1997, IDT), PSU 4467-1: 2005, IEC 61131-2 DSTU 2006 PSU 3626-97
Scope of delivery	Controller, Interface Connector, WiFi Antenna, Get Started, Warranty Card
Supported protocols	Modbus RTU/ASCII/TCP
	Delta Electronics DVP
	Siemens S7 Communication
	Siemens PPI
	Mitsubishi MELSEC
	Allen-Bradley DF1, Allen-Bradley Ethernet/IP
	1-Wire
	OWEN
	BACnet IP,
	Carel Easy

Subjects to change at any time, Version 02/2023