WebConnector

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

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rhx@nt-rt.ru || https://rexroth.nt-rt.ru/

The Drive & Control Company

Rexroth
Bosch Group

Rexroth WebConnector connects web technology and automation

Universal translator for the IoT

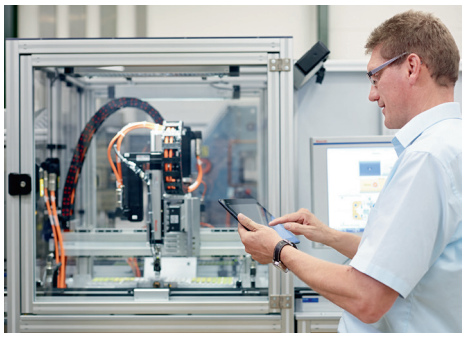
For those who want a cost-effective way to connect machines and systems with the Internet of Things (IoT), it will be necessary to have a „translator“. With the communications interface WebConnector, Bosch Rexroth has now flipped the switch for universal data exchange between automation components and internet-capable terminals. Embedded in the Open Core Engineering portfolio, it‘s now possible to do much more than develop platform-independent HMIs such as web or mobile apps. With the use of open Industry 4.0 standards and typical internet languages developers can now integrate smart devices and cloud services without interface programming as well, in order to strengthen their competitive position with new applications and big data analyses.

Independent and universally applicable thanks to Java technology

The platform-independent WebConnector programmed in Java can be used on all end devices on which a Java Runtime Environment (JRE) is installed. This could be an IndraControl XM control or an HMI device from Rexroth, or it could also be an embedded system, such as Raspberry Pi or any PC with Linux, macOS, or Windows.

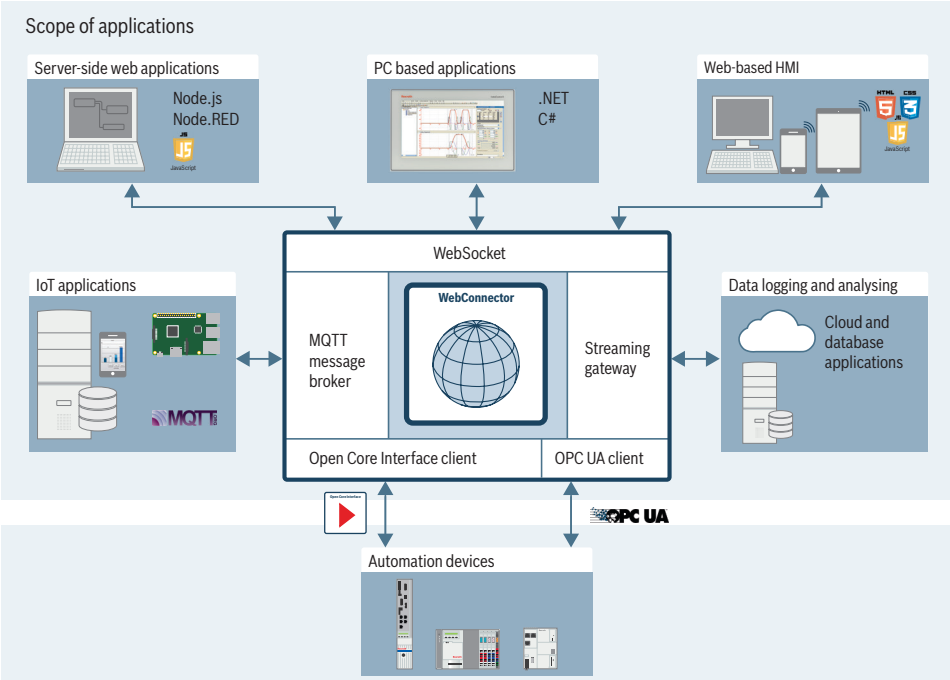
Universal translator for control systems, HMI devices and web services

As middleware, the WebConnector integrates an easy-to-use communication layer between the automation level and the web sites, web apps and cloud services to be executed. The “upward” communication in the direction of the web technologies is carried out using WebSocket, a TCP-based network protocol which establishes bi-directional connections between web applications and a WebSocket server and/or a web server. The WebConnector communicates “downward”, toward the automation level, either via the Industry 4.0 standard OPC UA or with the Rexroth interface technology Open Core Interface. With software development kits, developers can program the required access to the web or the Node.js, C# or Java applications on the Rexroth automation components.



WebConnector supports you in the implementation of Industry 4.0

- Easily connect enterprise applications with automation applications
- Fast access to control and drive data via WebSockets – without knowledge of the underlying protocols
- Integrated web server allows integration of custom HTML websites via standard browser
- Platform-independent, through the use of Java technology – runs on any operating system that supports Java
- Direct data access to automation components via smartphone or tablet



To implement individual Industry 4.0 applications, WebConnector supports you with numerous interfaces, protocols, data formats, and programming languages

- OPC UA
- Open Core Interface
- MQTT
- JSON
- Note.js
- Note-RED
- .Net
- #C
- HTML5
- CSS
- JavaScript

Efficient connection of data to web technologies

The WebConnector has an integrated web server to provide customer-specific HTML5 sites with direct access to the automation system level. For secure data communication to devices and cloud services, HTTPS and certificate-based TLS encryption are also available.

Open standards for IoT and Industry 4.0

The WebConnector is much more than a web HMI interface; that's demonstrated by the support of the IoT interface Node.js. It provides web developers with an abundance of open source modules. The modules are processed in their own JavaScript runtime environment and can be combined in any possible constellation as an open source stack. Using these node processes, databases and cloud services, can be connected to the collected data from the automation system.

M2M communication and notification via MQTT

For simple communication among machines, the WebConnector contains a broker for the protocol MQTT. The Ethernet-based and open M2M protocol allows the exchange of notifications between any networked devices. The MQTT broker is an autonomous module in the WebConnector which communicates independently from WebSockets with the participants.

The WebConnector as a streaming gateway

As a streaming gateway, the WebConnector is also suitable for connecting to modern databases and analysis services, all of which can be connected via an easily understandable streaming configuration. This allows the recording and analysis of real-time data, which can be then be used for monitoring machinery and system statuses via several locations or long distances and comparing the data.

As a universal process data gateway WebConnector conveies between web and automation world. This provides developers with a number of advantages

- Quick: Access via WebSockets (JavaScript and .NET) to control units and drives, no detailed knowledge of the underlying communication required
- Flexible: Connection of C #/.NET and web applications to Rexroth or 3rd-party components. Support for Industry 4.0 protocols (e.g. MQTT)
- Integrated: Web server for displaying HTML5 websites on a standard browser on board
- Independent: Able to run on all operating systems accessible from Java Virtual Machine, for example, Linux, Windows, Raspbian etc.

i 4.0 CONNECTED INDUSTRY

OPEN CORE ENGINEERING

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