

netIOT Edge

Edge gateways for Automation Networks

- Effortless integration into the automation network as standard field device
- Rapid modeling of the data flow between field and application with IoT editor Node-RED
- Direct OPC UA / MQTT communications to IoT capable field devices in parallel to the PLC
- Trusted platforms due to secured boot
- Secure HTTPS/TLS encrypted data transmissions



netIOT Edge Gateways securely connect automation networks with Cloud or IoT directed application. As field devices they exchange cyclic IO data with the PLC and communicate furthermore with IoT capable field devices over OPC UA or MQTT directly. This real-time field data build the basis for intelligent IoT applications of cyber-physical processes in ERP/CRM systems in modern M2M enterprise solutions.

Integrated security mechanisms such as physical separation of the OT network and the IT network, a trusted operating system, the execution of signed firmware and packets only and the usage of encryption techniques of the latest standards are securing the data integrity and protecting against any kind of data theft.

The web based IoT wiring editor Node-RED serves to configure the data flow in the devices. Data apps and profiles are created herein in minutes with over 70 predefined function blocks called „nodes“. Features in addition to this set for the otherwise closed gateways are available on demand as netIOT Service products. Available are native cloud connectors to specific cloud solutions for post installation or services such as software adaptations and many more.

netIOT Edge - Edge gateways for Automation Networks

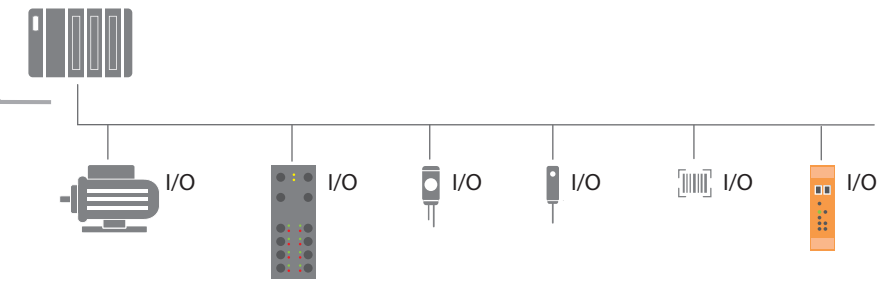


Maximum Security

- ▶ Physical separation of OT automation and IT Cloud network avoids mutual attacks
- ▶ Start of signed software only protects against manipulation and secures device integrity
- ▶ Data encryption according to the latest state of technology against electronic eavesdropping and data theft

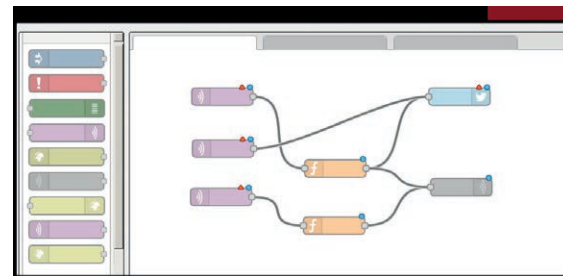
Seamless Integration

- ▶ Compatible with existing installations for simple upgrade
- ▶ Seamless integration with standardized device description files
- ▶ No programming skill necessary, simple configuration of the IO size is enough



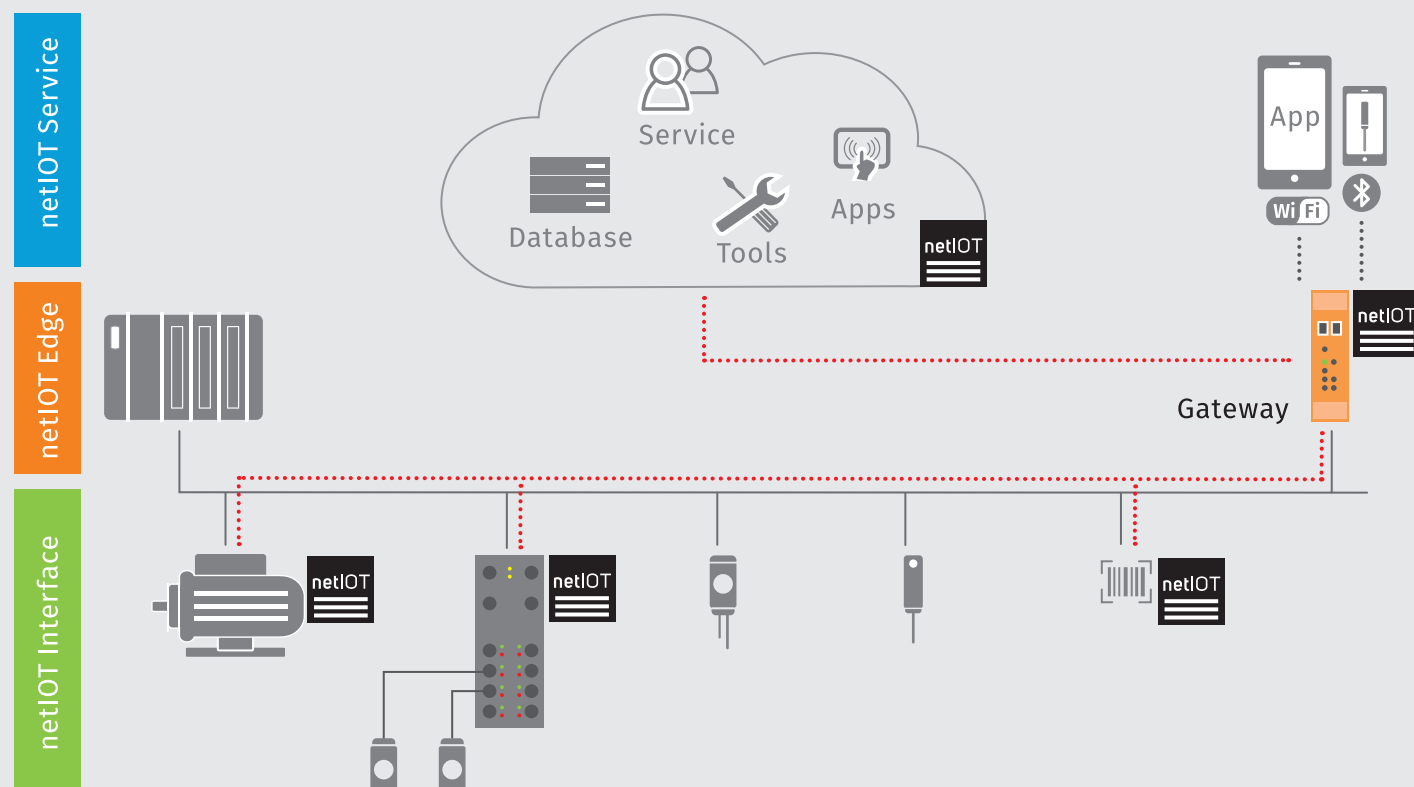
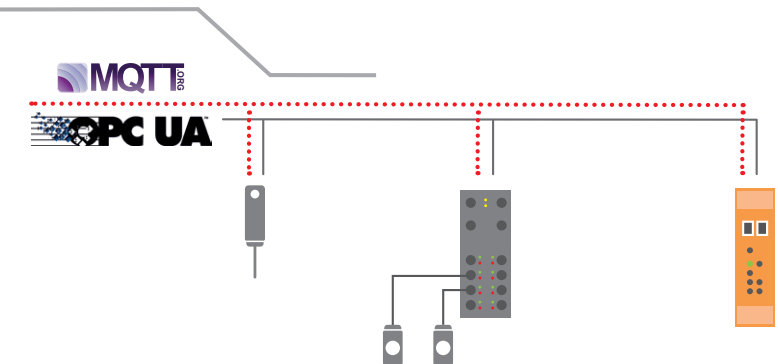
Easy Engineering

- ▶ Drag-and-drop principle, no programming necessary, just configuration
- ▶ Data wiring with given function blocks shortens the application construction time
- ▶ Functions encapsulated in nodes prohibits creating malware



Direct IoT communication

- ▶ For devices with OPC UA and MQTT protocol support
- ▶ In parallel to the PLC over a direct communication channel
- ▶ With data semantics for easy abstraction in the Cloud



The gateway as the central element in the netIOT offerings negotiates between automation devices, cloud and applications



netIOT Interface

netIOT Edge

netIOT Service

netIOT is a technology and service offer with the aim of exchanging data of components of an automation system with a cloud or IoT directed applications. It opens the door for centrally managed enterprise communications down to the field level.

netIOT is carried by the domains netIOT Interface, netIOT Edge and netIOT Service. netIOT Service provides software packages and development services for all matters around cloud and IoT technology. netIOT Edge provides the central network access via gateways and is responsible for data mining, preprocessing and negotiation. The domain netIOT Interface focuses on IoT enabled netX network controllers and communication modules capable of transmitting key telemetry data over IoT protocols in addition to their IO data.

Technical Data / Product Overview

Q3/2017



released



released



	Edge Gateway	„Connect“	„Remote“	„On-Premise“
Functions	Applications	For IoT applications with limited quantity scale. Data mining and data processing/distribution with Node-RED scope of functions only.	For demanding IoT applications with larger quantity scale. Sufficient performance reserve for future application expansions. Node-RED as basis, native cloud connectors* as option.	For data-intensive and complex IoT applications with demand on maximum performance, connectivity and memory size. Node-RED as basis, native cloud connectors* and on-premise cloud computing* as option.
	OT networks	PROFINET, EtherNet/IP, Modbus/TCP	PROFINET, EtherNet/IP, Modbus/TCP	PROFINET, EtherNet/IP, Modbus/TCP
	Services for IoT data mining and distribution	MQTT broker/client, OPC UA client	MQTT broker/client, OPC UA client, serial	MQTT broker/client, OPC UA client, serial
	Data wiring, processing and cloud connectivity	Node-RED, IBM Watson, Azure IoT Hub	Node-RED, IBM Watson, Azure IoT Hub, native cloud connectors*	Node-RED, IBM Watson, Azure IoT Hub, Docker for x64 own/third party software, native cloud connectors*
	Web services (REST)	OT network scan, diagnostics, device status	OT network scan, diagnostics, device status	OT network scan, diagnostics, device status
	Operating system	Security Enhanced Linux	Security Enhanced Linux	Security Enhanced Linux
	Security	TPM boot, HTTPS, TLS	UEFI boot, HTTPS, TLS	UEFI boot, HTTPS, TLS
Technical Data	CPU	1.2GHz Broadcom BCM2837	1.33GHz Atom®, Intel® E3805	2GHz Celeron®, Intel® J1900
	IT connection	1 x 10/100MBit, Mircochip LAN9514	2 x 10/100/1000MBit, Intel® I210AT	2 x 10/100/1000MBit, Intel® I210AT
	OT connection	2 x 10/100MBit, Hilscher netX51	2 x 10/100MBit, Hilscher netX100	2 x 10/100MBit, Hilscher netX100
	Memory	1 GB DDR3 RAM, 8 GB SD memory	2 GB DDR3 RAM, 16 GB eMMC flash memory	4 GB DDR3 RAM, 128 GB solid state disk drive
	Real-Time clock	yes, maintenance free	yes, battery (service interval 10 years)	yes, battery (service interval 10 years)
	Wi-Fi	802.11n (for service only)	802.11b/g/n (option W/F)	802.11b/g/n
	Display connection	HDMI*	-	DVI-I or DP*
	Digital I/Os	-	-	-
	USB	4 x USB 2.0 (500mA), max. load 1A	1 x USB 2.0 (500mA), 1 x USB 3.0 (900mA)	3 x USB 2.0 (500mA), 1 x USB 3.0 (900mA)
	Serial	-	1 x RS232/485 (switchable)	2 x RS232/422/485 (switchable)
	Dimensions (H x W x L)	120 x 40 x 100 mm	120 x 63 x 100 mm	182 x 85 x 157 mm
	Operating temperature	0 °C ... +60 °C	-20 °C ... +65 °C	0 °C ... +50 °C
	Power supply	19.2V ... 28V DC	9.6V ... 28.8V DC	19.2V ... 28.8V DC
	Approvals	CE	CE	CE, FCC

*available as netIOT service product

Note: Technical data may be changed without further notice.

	Article Description	Article Number	Article
Overview	NIOT-E-TIJCX-GB-RE	1321.300	Edge Gateway „On-Premise“ for Industrial Ethernet
	NIOT-E-TIB100-GB-RE	1321.200	Edge Gateway „Remote“ for Industrial Ethernet
	NIOT-E-TIB100-GB-REWF	1321.201	Edge Gateway „Remote“ for Industrial Ethernet inclusive Wi-Fi
	NIOT-E-TPI51-EN-RE	1321.400	Edge Gateway „Connect“ for Industrial Ethernet

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